Lumleian Lectures

ON

URIC ACID: ITS PHYSIOLOGY AND ITS RELATION TO RENAL CALCULI AND GRAVEL.[1]

Delivered before the Royal College of Physicians,

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LECTURE I.

MR. PRESIDENT AND GENTLEMEN,—On being requested to deliver the Lumleian Lectures for the present year at our College, I naturally felt much gratified by the honour; but, none the less, I should have hesitated to accept the responsibility of addressing you in my present capacity, had it not so happened that I was at the time engaged in completing some investigations which I had begun many years before. As these had relation to the production of uric acid in the animal economy, and to its morbid manifestations—subjects of deep interest to the physician,—I thought that the results of these researches might not be altogether without attractiveness to my professional brethren, if they were made the subject matter of the present course of lectures.

Having, therefore, a subject to bring before you which contains some little novelty, and, as it were, breaks new ground, I put this fact forward as my excuse for appearing to-day in the capacity of your Lumleian Lecturer.

Let us imagine a partition separating the blood from the urinary excretion, such as, in nature, is found in the walls of the renal vessels; then uric acid, free or in combination, may exist either on the one or on the other side of this membranous partition; if on the one side—that is, in the blood—it originates symptoms which are referable to various organs; it may be deposited in the articular tissues, and produce the typical form of joint-gout, with chalk-stones; or it may affect the skin in the shape of eczema, or cause cramps, neuralgic pains, dyspepsia, &c., according to the part particularly selected. On these I shall not touch in this course of lectures, having had full opportunities of setting out my views and researches elsewhere. But uric acid is also to be found on the other side of our imaginary partition, that is, in the urinary excretion, and, under certain circumstances, it forms morbid deposits, such as go by the names of gravel and calculi, and it is to these that I shall confine my attention, with special reference to their pathology and treatment.

In some animals, as the mammalia, including man, urea [$CO(NH_2)_2$ or CH_4N_2O] is the chief nitrogenised principle, and it is the one which is richest in nitrogen, containing as much as 44·66 per cent. It appears that the average quantity of urea excreted in the twenty-four hours is 512·4 grains, and that, for each avoirdupois pound, 3·33 grains are eliminated daily. It is in the form of urea, therefore, that the chief part of the nitrogen in a very large and important class of the animal kingdom is eliminated.

The next principle to be mentioned is uric acid ($C_5H_4N_4O_3$) which was formerly called lithic acid, and has recently been synthesised. This acid, combined with more or less ammonia, forms the chief part of the nitrogenised excretion of birds and reptiles, as also of almost all invertebrate animals, and a small part of that of man and the other mammalia. It contains 33·33 per cent. of nitrogen, but, if estimated as urate of ammonia, as much as 37·83 per cent. Its properties, especially as regards solubility in water or the animal fluids, differ greatly from those of urea, for it is with the greatest difficulty that it is dissolved, requiring, when pure, as much as 8000 times its weight of distilled water at about the temperature of the blood (100° Fahr.). The salts of this acid are more soluble, but yet, in comparison with others, only slightly so, and they and the acid itself readily crystallise out from the fluids in which they are dissolved. It is owing to this property of insolubility that uric acid, although it forms so small a proportion of the urinary excretion in man, so frequently is a cause of disease. In the first place, it may concrete in the kidneys, forming gravel and renal calculi, which, when they reach the bladder, if they remain there for any time, encourage the precipitation of a further quantity of uric acid or urates upon them, and thus vesical calculi are formed; or, secondly, uric acid may be present in the blood and lead to special symptoms in different organs, or become deposited in the form of urate of sodium in various tissues, producing much discomfort.

There is a third body—viz., hippuric acid ($C_9H_9NO_3$), which is found in the urinary excretion; largely in that of the herbivorous mammals; in small and varying quantities in the urine of man; but almost, if not entirely, absent from that of the carnivorous mammals. It will be seen from its formula that the percentage of nitrogen contained in it amounts to 7·82. Although hippuric acid has hitherto been regarded as a comparatively insignificant ingredient, at least in the urine of man, we shall, as we advance in our subject, find that it plays an important *rôle* in the metabolism going on in the system, one which, to us, as students of disease, is of deep interest.

It is in the form of one or other of these three substances, with comparatively slight exceptions, that the whole of the nitrogenised waste of the body is eliminated from the system by the renal organs, little or none escaping by any other channel.

As uric acid is the principle which will chiefly engage our attention in these lectures, and as a correct knowledge of the mode and place of its formation in the economy is of the utmost importance if we ever hope to arrive at the solution of the problem of the cause of calculi, and to develop some method of preventing their occurrence, and, more especially, as the views I have arrived at during the study of the subject differ so much from those held by almost all physiologists, I shall not attempt to apologise for occupying your time with the investigation of the nature of this substance.

Origin of Uric Acid in the Animal Economy.—There are, at least, two possible theories as to the formation of uric acid. Of these, the first is, that it is formed during the metabolism constantly going on either in the system at large, or in special organs—such as the spleen, lymphatic glands, liver, lungs, &c.; and that, when formed, it reaches the blood, and is afterwards rapidly eliminated by the kidneys. From the point of view of this theory, the renal organs are merely the drawers-off or filterers from the blood of the uric acid which it brings to them. For the sake of brevity, I shall, in these lectures, call this the *first* view.

Another, which I shall call the *second* view, may be held. In this it is assumed that the kidney is the organ whose function it is to produce uric acid; that this principle is formed in the renal cells from nitrogenised matters brought to them by the blood; and that, in so far at least as uric acid is concerned, the kidneys do not act in any degree as filterers or strainers. There are few physiologists or pathologists, at the present time, who hold this opinion; and the discovery of uric acid in the blood, which I made in 1847, seemed, at first sight, to militate against it: for it appears to follow, from the fact of the presence of uric acid in the blood, that it must be formed before the blood reaches the kidneys, and not in those organs.

In the course of our investigation into the value of these two views respectively, we shall have occasion to bring forward almost all the facts at present known with reference to the physiology of uric acid, and these require a satisfactory explanation before we can definitely arrive at any choice between the rival theories.

The two theories above mentioned may be shortly summarised as follows. In the first, the kidney is regarded simply in the light of a strainer or filterer of the uric acid which is found in the blood, and passes through to it. In the second, the kidney is held to be the actual producer of uric acid, and the presence of this principle in the blood and tissues is explained by resorption from the renal cells, a process which is scarcely appreciable in health, but becomes more and more marked in proportion to the difficulty which the uric acid has in finding its way to the uriniferous tubes.

In considering the physiology of uric acid, I must, in the first place, draw your attention to the fact that there are great differences between the urine of different classes of animals, both in physical condition and in chemical composition. In some animals the urinary excretion is very thin and watery; in others, it has the consistence and appearance of thick cream, these differences depending, of course, on the ratio between the water and the solid constituents of the

[1] To economise space a few less important passages have been omitted from this report.—ED. L.

excretion. The constitution of the solid portion of the excretion also varies much; in some urines the urea is abundant, the uric acid very scanty, or even altogether absent; in others, these two constituents are both present in large quantities; while, in a third class, the urea is either very small in amount, or entirely absent; uric acid, in some form of combination, constituting almost the whole of the solid portion of the urinary excretion.

1. *Mammalia.*—The urine of man we will not discuss at present, as we shall have to speak about it when dealing with the formation of renal calculi and gravel; it may, however, be mentioned in passing that, in constitution it closely resembles a combination of that of the carnivorous and herbivorous mammals, as, indeed, might have been anticipated from our knowledge of the anatomical structure and the nature of the food of man.

The urinary excretion of the carnivorous mammals is a watery and heavy fluid, its specific gravity being sometimes as high as 1070. I have found that of the lion and tiger to be 1063 and 1064, of a distinctly acid reaction, and a not disagreeable odour; nor is it liable, as has often been asserted, to rapid decomposition. The urine is rich in urea, so much so that often a single drop placed on a piece of glass will, after a few minutes, become a mass of crystals; and with nitric acid, it immediately becomes solid, from the formation of nitrate of urea. Uric acid is usually found in it, but in very small quantities, never, at least when the animals are kept in confinement and sparingly fed, reaching the amount contained in human urine.

No hippuric acid is found, at least under ordinary circumstances, in the urine of the carnivorous mammals; a fact on which I wish particularly to insist.

Next, as to the herbivorous mammals. The chief points of relation and difference between the urine of these and the carnivorous mammals may be thus summed up. It is usually a heavy fluid. I have found in the horse the weight ranging from 1025 to 1045. In the elephant (female) it was 1033, and in the camel 1047; but only one examination was made in each case. In the cow and ox I have found it as low as 1014 and as high as 1035. It is always alkaline in reaction, except in the sucking animal, and of a peculiar but not unpleasant odour.

The urine of the herbivorous mammal is rich in urea, less so than that of the lion or tiger.

One of the most characteristic substances found in the urine of herbivora is hippuric acid, which derives its name from the fact that it was first discovered in the urine of the horse. Under ordinary circumstances this acid exists in quantity at times equal to that of the urea.

2. *Birds.*—The urinary excretion of birds, as far as my observations go, is semi-fluid, cream-like, and very rich in uric acid. As much as 90 per cent. of uric acid, or even more, has been found in it, together with a varying quantity of ammonia. I have always found it distinctly acid in reaction, whether the bird was living on meat or grain.

3. *Reptiles.*—In so far as the eye can discover, or as chemical analysis has succeeded in making out, the urinary excretion of ophidian and saurian reptiles is identical with, or most closely resembles, that of birds. I have carefully examined that of several pythons, boas, cobras, and the common English snake; also of various saurians, as the Australian monitor, &c. Urea is said to be absent. In the chelonian reptiles, the excretion differs from that of ophidians and saurians, in being almost liquid, usually consisting of a clear watery fluid, containing opaque white flakes of urates.

4 & 5. *Batrachians and Fish.*—With regard to these classes of animals but little information has as yet been obtained.

6. *Invertebrata.*—Lastly, one word as to the nature of the urinary excretion in the invertebrates. With the exception of animals belonging to the class arachnida, as the scorpion and spider, which excrete guanine ($C_5H_5N_5O$), a substance found in guano, and probably derived from uric acid, and closely related to it in composition, all the invertebrata throw out uric acid or urate of ammonium.

Having now given a short sketch of the character and composition of the urinary excretion of the different classes which compose the animal kingdom, we are naturally confronted by the question: Why this difference in the excretion of nitrogen? why in some animals does it chiefly take the form of urea, in others that of uric acid? The supporters of the first view have attempted many explanations, the favourite one being that it depends on the greater or less activity of the function of respiration. Liebig pointed to the fact that mammals, having a high temperature and active respiratory function, throw out but little uric acid and a large quantity of urea; whereas reptiles, with a low temperature and a correspondingly low respiration, throw out their nitrogen chiefly as uric acid. This view was founded on limited data, and we have only to turn to the large class of birds for its refutation. Here we see animals with the highest temperature and a respiration correspondingly active eliminating their nitrogen in exactly the same form as the cold-blooded reptiles.

The nature of the food taken has been thought by many to have a powerful influence on the excretion of uric acid, but it needs very little consideration to show the inaccuracy of this idea; for ophidian reptiles, as the python and boa, which live exclusively on animal food, and grain-eating birds, such as the canary and others, whose food consists entirely of seeds, excrete the same nitrogenised products; in fact, it is difficult to separate the urinary excretion of the one class from that of the other, as I have already stated, both consisting of uric acid in combination with some ammoniacal compound. Again, if we compare a toad with a lizard, the little influence of the character of the food is at once strikingly shown: both animals live on flies, yet the urine of the toad is clear and watery, and contains no appreciable uric acid; whereas that of the lizard resembles cream, and consists mainly of urate of ammonium. The excretion of uric acid and of urea also is doubtless much influenced by the amount of food taken, whether in the same ratio has not yet been determined.

Some physiologists look upon the spleen as the producer of uric acid; others regard the liver, some the lymphatic glands, and some the cartilaginous tissues, as the originators of this principle. But there is one fact which must not be lost sight of—viz., that whether an animal throws out all its nitrogen in the form of uric acid, or in that of urea, it, equally in either case, possesses a spleen, a liver, lymphatic glands, and cartilaginous tissues.

Of course, if we accept the second theory, and regard the kidneys as the producers of uric acid, the difficulty of the question is at once solved; we have only to regard the kidney as containing different cells; some, perhaps, for the formation of urea; some, at least, for the production of uric acid, and to hold that the number of the latter cells, compared with the other excreting cells of the kidney, differs in different classes of animals.

Let us pass on to another point in the physiology of uric acid. How can we explain the fact that, in proportion to the weight of their bodies, some animals excrete so large a quantity of such an insoluble principle as uric acid, or even as urate of ammonium, the one requiring 8000, the other 2400 times its weight of water at the body temperature to dissolve it? The human subject excretes, on an average, in the twenty-four hours about one part of uric acid for each 120,000 parts of his weight, or, estimating the weight of a man at 10½ st., throws out about eight grains of this acid daily. In the case of the lower animals I could find no facts on record relating to this subject, and therefore had to undertake to supply them for myself by means of the following observations and experiments. I had a cage constructed, with a glass floor, so as to be able to collect the whole of the excreta of the twenty-four hours from the bird that occupied it, and from such I carefully ascertained the quantity of uric acid: no difficult process.

1. A canary bird was kept in the cage, its food consisting of a supply of canary seed, millet, and hemp, together with water. In twenty-four hours I found that the excretion of uric acid was 2·1 grains and the weight of the bird was 277 grains, so that the ratio of the uric acid excreted in twenty-four hours to the weight of the bird itself was 1 : 132·2.

2. An Australian grass parrakeet was next kept for twenty-four hours in the same cage, and fed on the same food. The weight of the excreted uric acid was 3·1 grains, that of the bird 415 grains. The ratio of the uric acid to the weight of the bird was 1 : 133·8.

Had I calculated the weight of the bird from the weight of its excreted uric acid, taking the ratio in the case of the canary for my standard, I should have estimated the weight of the parrakeet at 409 grains instead of 415. The observation was repeated with a second parrakeet of the same weight, and the same result was obtained—viz., 3·1 grains of uric acid in the twenty-four hours. Let us, then, take 1 : 120 as a fair ratio, including in the calculation both carnivorous and graminivorous birds, and we arrive at the somewhat startling conclusion that the bird, in proportion to its weight, excretes 1000 times more uric acid than man.

In pursuit of this subject, I made further observations on

the relation between the daily weight of the uric acid excreted and the weight of the renal organs themselves. In the case of a lark I found that the ratio of the weight of bird to that of kidneys was 125 : 1; in that of a linnet, 118 : 1. Taking the lark and linnet therefore, after calculating their daily excretion of uric acid, we find that it amounts to more than the weight of the kidneys of the same birds. Let us reflect on these facts. Is it possible to conceive, if we assume that the uric acid first exists in the blood, that the amount of this fluid passing through the renal organs could excrete as much of this principle as we have found, as a fact, to be thrown out? True, in the case of man, who excretes only one-thousandth part of the uric acid thrown out by birds, we could easily imagine this to be the process, but the more we consider the facts about birds, the more difficult does it become to believe in this explanation, and if we go further and hold it impossible, then the first view as to the formation of uric acid appears to me to fall to the ground.

As this question is of the utmost importance to physiology, and as its decision must necessarily be followed by weighty consequences, it is essential that nothing should be left undone which might help us to the truth. With this object before us, there arise many points which must be determined, and, first of all, we must ascertain the condition of the blood of various animals, especially with regard to the presence or absence of uric acid. I have obtained many such data from observations made during a long course of years. I have several times examined the blood of man in health, and many hundred times in various diseases, and the conclusion at which I have arrived is this: that in absolute health the uric acid in the blood is inappreciable by our tests, and that that fluid does not contain the 100,000th part of its weight of the acid, while in gout the blood is very rich in this principle, as I showed in 1847; that uric acid is also found, in much smaller but still appreciable quantities, in individuals who are developing a gouty condition, or who are under the poisonous influence of lead.

In the blood of various other mammals, as the ox, sheep, and pig, I have never found a trace of uric acid by the uric acid thread test. I have also examined the blood of several species of birds, as the turkey, common fowl, pigeon, and duck, repeatedly in some instances, and have found it as free from uric acid as that of the mammal.

The result of these observations must be looked upon as somewhat striking, and even startling, to those who regard the uric acid in the urine as simply a filtration from the blood, when we remember that the blood of birds, whose urinary excretion is almost entirely composed of uric acid, is as free from that principle as the blood of the herbivorous mammal, in whose urine it is usually difficult to detect a trace; or, again, that the blood of the bird is as free as, and often freer, than that of man from uric acid, though it excretes daily about $\frac{1}{10}$th of its own weight of that principle, man eliminating not more than $\frac{1}{1000}$th.

Let us go a step further in the inquiry, and let us assume, for the sake of argument, that the blood of a bird contains, which it certainly does not, $\frac{1}{100000}$th of its weight of uric acid, a quantity which, if present, could easily be detected by my so-called "uric acid thread test," and let us make a rough calculation of the quantity of blood which passes through the kidneys in the twenty-four hours. The figures contained in the table may be regarded as sufficiently correct for the purpose of illustration.

I assume the weight of the bird to be represented by a certain figure for convenience sake, and all the appended numbers have relation to that number.

TABLE (*illustrative only*).

	Grains.
Weight of bird	277·0
,, heart	4·0
,, kidneys	2·5
,, blood in body	23·5*
,, uric acid excreted in 24 hours	2·1
,, blood thrown from left ventricle at each beat of heart	1·0
Pulsations of heart in 24 hours (120 per minute) 172,800	
Weight of blood passing through kidneys at each beat	0·10 (?)
Weight of blood passing through kidneys in 24 hours	17280

* Calculated at 8·5 per cent. from starling.

Assuming that one-tenth of the blood that leaves the left ventricle at each beat passes through the kidneys, in which case nearly 7000 times the weight of the organs would pass through them in twenty-four hours, then the whole of that quantity would not contain one-sixth part of the uric acid excreted during the same time by the bird. We have, in this illustration, given every possible advantage to the supporters of the first theory, for we have assumed not only that what I should imagine to be a most abnormally large amount of blood passes through the kidneys, but also that the blood contains a much larger quantity of uric acid than is really the case. Add to this that we have assumed in the calculation that no trace of uric acid escapes filtration in every passage of blood through the renal vessels—a most improbable assumption. We shall soon have occasion to see what the filtering powers of the kidneys really amount to; in other words, how much uric acid they can excrete from a blood which is known to be rich in that principle.

Our next point is to ascertain what takes place when uric acid, in the form of one of its salts, is administered by the stomach or injected into the blood. In 1849 I gave urates of ammonium, sodium, and potassium with the following results: A man was passing on an average 8·07 grains of uric acid in the twenty-four hours, taking no drug. Urate of potassium was given, in five-grain doses, three times a day; the dose was afterwards increased to ten grains. During the time he was taking the urates the average excretion of uric acid was 8·25 grains—i.e., practically the same as before. I find appended to this case a note of no little interest—viz., that during the administration of the urates the man, who had some eczema, experienced a great increase of skin irritation, which subsided on their discontinuance. This goes far to prove, first, that the substance was absorbed into the blood, and, secondly, that some forms of eczema are closely connected with the presence of uric acid in the blood. To another man I gave, at first urate of sodium, and afterwards urate of ammonium in doses of fifteen to thirty grains, without the slightest detectable increase of uric acid in the urine.

Subsequently Wöhler and Frerichs found that when urates of potassium and sodium were taken there was an increase of the urea, and a sediment of oxalate of calcium in the urine, but no augmentation of the uric acid. Neubauer found that in rabbits the exhibition of large quantities of uric acid was followed by a corresponding increase of the excreted urea, but no uric acid was discovered in the urine. The injection of urates into the veins was followed by the same negative result as ensued when uric acid was given by the stomach.

If the kidneys act merely as strainers off from the blood of the uric acid brought to them by that fluid, how can we explain these facts? Is it not impossible to do so? If, however, we regard the kidneys as the producers or manufacturers of uric acid from matters brought to them by the blood, then all difficulty with respect to the facts above mentioned vanishes, and we see at once why the amount of uric acid has no necessary relation to the character of the food, but depends on the activity of the formative cells, and the quantity of pabulum brought to them in a given time.

Before we proceed to discuss another point in the physiology of uric acid you must allow me for the moment to assume, what I shall afterwards have an opportunity of proving, that in the kidney cells this acid exists combined with ammonia, or, at any rate, with a base yielding ammonia, and not with any fixed base, as soda, potash, or lime; but that when it is found in the blood, or deposited in the tissues, either of man or the lower animals, it is in the form of urate of sodium. As far back as the year 1847, when I first found uric acid in the blood, I proved that it was in the form of the soda salt.

A few years ago an interesting case of this sort came under my notice, which, as it strikingly illustrates the question which we are now considering, I will relate as concisely as possible. An Australian grass parrakeet, which had been quite recently imported, came into my possession and, within a few weeks of its arrival, I found on the digits of its claws little white nodules or protuberances, most of them larger than a pin's head. The bird soon sickened and slowly died. It was afterwards found that each of these nodules contained a cheesy matter, which, under the microscope, exhibited the appearance of being made up of innumerable very fine needle-like crystals, polarising light with great intensity, and, when chemically examined, yielding an abundance of uric acid, but no ammonia. When

incinerated, it yielded the characteristic soda ash. The deposit was, therefore, composed of urate of sodium. It was afterwards discovered that, not only were the digits of the claws studded with this matter, but that it extended along the shaft of each leg, and there was a long rod of it in front of the cervical vertebræ, behind the trachea.

Let us now see how these facts can be explained on one or other of the two theories of the formation of uric acid. On the first, it is not difficult to suppose that uric acid may be formed, either in that shape or as urate of sodium (at any rate it would exist in the blood as the soda salt), and become deposited, under certain circumstances, in different organs and tissues of the body; but then comes the difficulty of explaining how it is that it is thrown out by the kidneys combined, not with soda but with ammonia. I cannot conceive any satisfactory explanation under this theory. I know of no chemical conditions which would render such a change possible and would cause urate of sodium to be filtered through as urate of ammonium.

Let us now, for a moment, adopt the second view and assume that urate of ammonium is produced in the kidneys, and that it sometimes becomes resorbed (the word, though uncommon, is the best expression of the process) into the blood after its formation. How is it that it then becomes changed into urate of sodium? There is no difficulty here, for I have shown that, when urate of ammonium is added to a solution containing a large excess of either phosphate or chloride of sodium, it is converted into urate of sodium, and will crystallise out as such. All difficulty, therefore, as to the explanation of the change in the salt as it passes from the kidney cells into the blood is at once removed, and it necessarily follows that the tissue-deposits which occur in disease must be composed of urate of sodium. As I have already said, those who consider that uric acid is formed before it reaches the kidneys usually look to some other organ as its source—e.g., the spleen.

If the spleen is the organ in which uric acid is formed, why should not this acid be present in the urine of herbivorous as well as carnivorous mammals? On the same assumption, should we not expect that uric acid would exist in much larger quantities in the spleen of animals whose urinary excretion consists mainly of that principle than in others whose urine is often devoid of it? As far as my experiments go, the very reverse is the case, for, while uric acid was easily detected in the spleen of the ox, in that of the bird it was most difficult to discover it. Again, it would naturally be expected that in animals that throw out uric acid the spleen would be larger, proportionally, than in others, but I am not aware that such is the case. It must also be remembered that uric acid has been asserted by different observers to be present in other organs besides the spleen, as the liver, lymphatic glands, and brain.

Assuming that our second view is correct and that the kidneys are the true formative organs, then an explanation of the presence of uric acid in the spleen, liver, and other parts is not difficult. When, from any cause, there is an appreciable back-flow of uric acid from the renal organs and resorption, then the blood becomes more or less impregnated with that principle, as we find to be the case in disease, and, under these circumstances, it is attracted by various tissues and becomes united with them. May it not be the case that, when uric acid exists in the blood, it is attracted differently by different organs, and thus the spleen and liver more frequently contain appreciable quantities than other tissues? Or, again, may it not be that in some organs, as the spleen, the substance of which, if not acid during life, rapidly becomes so after death, while the blood remains strongly alkaline, the uric acid becomes less soluble and more easily retained?

Before concluding this, the purely physiological part of our subject, I will state that there are a few facts which demand full explanation under any theory which claims to be accepted as the true one. For instance, the urine of the sucking calf and of the young of other herbivora contains uric acid in notable quantities, while that of the adult animal is usually free from it. How can this be reconciled with the view that uric acid is formed in the kidneys? There are also other facts closely allied to these which appear to be equally difficult of explanation by the second theory.

In the course of these Lectures I hope to be enabled fully to solve these difficulties, and, in so doing, to bring before you many observations, the results of which may prove to be of great service and value both in pathology and in therapeutics.

Gulstonian Lectures
ON
STERILITY IN WOMAN.

Delivered in the Royal College of Physicians, London,

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LECTURE II.—PART III.

ITS THEORY OR CAUSATION.

IN Galton's statement of the actual infertility of heiresses there is observable a remarkable comparative paucity of male issue—a fact which goes, like many others, to confirm the ancient and still prevalent opinion that relative sterility or weakness of reproductive energy tends to the production of females rather than males. This department of the study of sterility I shall not enter on, the causes of the excess of females over males in all births being the subject of an extensive literature, and its relations being too numerous and complicated for advantageous discussion in this place. But I may state that I have long been impressed with a belief, in accordance with the chief pertinent facts, that the excess of female births is due to the prevalence of a degree of weakness of reproductive energy. Excess of female births is coincident with other evidences of sterility.

We have already given reason for believing that when a woman bears above ten of a family she shows an unnatural or excessive amount of fertility; and this belief is corroborated by the demonstration we now propose to give that excessive families occur chiefly in women who are married in the sterile age, or ages of weak reproductive energy characterised by absolute sterility and by morbid production, whether abortive, premature, or mature. At present we only consider the production of mature children, and we find the unnatural intensity of fertility in the young shown by absolutely large number, that is, above ten; while in the elderly it is shown by rapidity of births or intensity of fertility, so long as it lasts; and we may here remark that it has been elsewhere proved that for such women as begin childbearing late in life, there is a prolongation of the period of fertility beyond the average age of ceasing to bear, not a prolongation, as estimated from beginning to end, of actual childbearing.

That the fertile younger are more fertile than the fertile older is shown by the following table of data derived from

TABLE XVII.

Showing the Fertility of Mothers Married at Different Ages.

Years elapsed since birth of first child.	Average number of children to each marriage formed at ages—			
	16-20.	21-25.	26-30.	31-35.
10	5·05	4·51	4·42	3·44
20	7·68	7·01	6·43	3·00
30	8·41	7·89	6·80	7·00
40	10·85	8·24	5·00	4·00

St. George's-in-the-East. That the younger fertile have a longer perseverance in fertility than the fertile older is shown by Table XVIII. derived from my work on Fecundity. That the unnatural intensity of fertility in women bearing large families begins with the commencement of childbearing is shown by Table XIX. from Ansell, which demonstrates the rapidity, only up to the birth of the third child, in families of various numbers. Up to the third birth the rapidity is twice as great in families of sixteen or more as in families not above three, and it is easily counted that while the small families came slowly, and the excessive families quickly, the families from seven to twelve came nearly at the average rate of one

TABLE XVIII.

Showing the Amount of Continuance in Fertility of Wives Married at Various Ages, as shown within Twelve Months.

Age of mother at marriage	15–19	20–24	25–29	30–34	35–39	Total.
The number child-bearing in the fifth year of married life is 1 in	2·6	2·7	4·1	4·9	10·5	3·2
The number child-bearing in the tenth year of married life is 1 in	3·2	4·0	5·9	8·7	—	4·4
The number child-bearing in the fifteenth year of married life is 1 in	4·6	6·8	18·2	37·4	—	8·0
The number child-bearing in the twentieth year of married life is 1 in	8·5	14·6	129·8	—	—	16·3
The number child-bearing in the twenty-fifth year of married life is 1 in	68·0	480·5	—	—	—	171·0

TABLE XIX. (*from Ansell.*)

Showing Intensity of Fertility in Mothers of Families of Different Numbers.

In families consisting of the undermentioned numbers of children.	Interval between the marriage of the parents and the birth of the—		
	First child.	Second child.	Third child.
	Years.	Years.	Years.
1, 2, or 3	1·78	4·84	7·38
4, 5, or 6	1·37	3·32	5·49
7, 8, or 9	1·18	2·82	4·68
10, 11, or 12	1·05	2·54	4·15
13, 14, or 15	1·06	2·40	3·81
16 or more	0·96	2·15	3·47

TABLE XX.

Showing the Intensity of Fertility in Wives Mothers of Different Ages.

Duration of marriage.	Mother's age.						
	15–19.	20–24.	25–29.	30–34.	35–39.	40–44.	45–49.
Under five years	1·128	1·519	1·825	1·844	1·827	1·698	1·200
Five years and under ten	2·500	3·190	3·750	4·048	4·085	3·792	4·000
Ten years and under fifteen	—	5·333	5·453	5·903	6·197	5·964	6·500
Fifteen years and under twenty	—	—	6·000	—	7·914	7·993	8·435
Twenty years and under twenty-five	—	—	—	7·000	9·396	9·718	10·528
Twenty-five years and under thirty	—	—	—	—	—	12·368	13·600
Thirty years	—	—	—	—	—	—	13·000

TABLE XXI.

Showing the Ages of Mothers in Forty Cases of Triplets.

	Age of mother.																	
	19.	20.	23.	24.	25.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	44.
Number of cases	1	3	1	2	4	2	2	1	6	1	1	1	1	6	2	2	3	1

TABLE XXII.

Showing the Number of Pregnancy in Forty-one Cases of Triplets.

Number of pregnancy	1	2	3	4	5	6	7	8	10	11	12
Number of triplets	8	8	12	2	2	2	3	1	1	1	1

every eighteen months. That the unnatural rapidity of childbearing in excessive families continues throughout childbearing life is shown clearly by Tables IV. and V. In my table the quickest childbearing is every ten months, the family being nineteen in number. In Ansell's table the quickest is every fifteen months, the family being eighteen.

Lastly we show, by a table framed from the Edinburgh and Glasgow data, that the wives beginning fertility at advanced periods of life have an unnatural intensity of fertility while it lasts, a greater intensity than that of women married and beginning to childbear at the best ages. (See Table XX.) The table reads thus: To take the second row of figures—Fertile women five years married and under ten have, if they are now from fifteen to nineteen years of age, 2·5 children; if now from twenty to twenty-four years of age, 3·19 children; if now from twenty-five to twenty-nine years of age, 3·75 children and so on.

Multiparity is a term already well recognised as implying that the subjects of it have had two or more pregnancies and births; but a woman may bring forth two or more children at once, and to this condition we apply the term pluriparity. The most common degree of pluriparity is the production of twins, these occurring about once in every eighty pregnancies. Triplets and higher numbers are very much rarer, and the rarity increases with the number.

Chiari, Braun, and Spaeth have given good evidence that abortions are comparatively more frequent in plural than in ordinary pregnancies. M'Clintock, founding on large experience, shows that hydramnios is also common. Acephalous monsters are found only in plural pregnancies. Monstrosities of all kinds are commoner in plural than in ordinary pregnancies. There are more dead-born children in plural pregnancies. The children born alive in plural pregnancies are more difficult to rear. "The proportion," says Ansell, "of infants that are stillborn or die soon after birth is, in the case of males nearly five times, and in the case of females nearly four times, greater in multiple than in single births."

Subsequently we shall adduce evidence that pluriparity is specially associated with idiocy and imbecility of the children, and that it specially affects the sterile ages, or ages of weakness of reproduction. Excessive family, that is, above ten in number, specially affects the same ages, and is dangerous to the lives and injurious to the health of both mothers and children. Both have therefore an alliance with sterility.

In a case of quintuplets the mother's age was forty and the pregnancy the tenth. In 7 cases of quadruplets the age of the mother was given in 6, and the mean is twenty-seven; the number of pregnancy was given in 6, and the mean is nearly three. The ages were nineteen and twenty with first pregnancies; twenty-five with third pregnancy; thirty with number of pregnancy not stated; thirty-two with a fifth pregnancy, and thirty-five with a fourth pregnancy. In one case of second pregnancy the age of the mother was not given. From a great variety of sources I have collected 43 cases of triplets (and of these I give in the subjoined tables some account). (See Table XXI.) In 40 cases the age of the mother is given, and the mean is thirty. In 41 cases the number of the pregnancy is given, and the mean is four. (See Table XXII.) It is naturally expected that our best evidence should be derived from twins, but while this is really so we have, even in these cases, to deplore the inadequacy of the data in point of number. I have not at present sufficient time at my disposal to enter into the details of the production of twins, and for these I refer you to my work on Fecundity. It is there shown that the frequency of twins increases with the age of the mother and with the number of the pregnancy, the very early ages of the mothers and the first pregnancy forming exceptions to the rule.

In a paper by Arthur Mitchell, published in the *Medical Times and Gazette* (Nov. 15th, 1862), he shows that twins are peculiarly liable to be imbeciles or idiots. The conclusions of Mitchell's paper are so pertinent to the present subject that I quote them here at length. "1. Among imbeciles and idiots a much larger proportion is actually found to be twin-born than among the general community. 2. Among the relatives of imbeciles and idiots twinning is also found to be very frequent. 3. In families, when twinning is frequent, bodily deformities [of defect and of excess] likewise occur with frequency. 4. The whole history of twin births is exceptional, indicates imperfect development and feeble organisation in the product, and leads us to regard twinning in the human species as a departure from the physiological rule, and therefore injurious to all concerned. 5. When we pass from twins to triplets and quadruplets, everything we know regarding these latter gives support to the general conclusions in question."

Besides these accumulated dangers and disasters to the children produced in plural pregnancies we know that plural pregnancy is dangerous and disastrous to the mothers. The trivial and the graver disorders of pregnancy are more common in pluriparous than in uniparous women, and the disasters and deaths in childbirth and in childbed are also more numerous in the pluriparous than in the uniparous. Nothing can be better demonstrated than that woman is naturally or normally uniparous, and that pluriparity is an unnatural or abnormal condition connected with sterility by being observed in the sterile ages, or ages of weakness, or imperfection of reproductive power. It does not imply the desirable productiveness of health and vigour, but the reverse.

Pluriparity in a population, then, is not an indication that its social condition is as it should be. It shows, according to its amount, that marriages take place too early or too late in life; and it may be predicated of such a population that it has a correspondingly large maternal and infantile mortality, and that the reared children are not of the finest. While woman is normally or physiologically uniparous, like the mare and cow, many of the other domestic animals are normally or physiologically pluriparous, as the dog, the rabbit, and the sow; and the fertility of most birds is a sort of pluriparity.

In the uniparous animals pluriparity is rare in various degrees in the different kinds; but the extreme rarity in some, as in the mare, may to some extent depend on the circumstance that, in general, only the finest specimens at the most suitable ages are allowed to exhibit their fertility. Little, indeed, is known about them with the exactness desiderated with a view to comparison with woman. Yet we may safely assert that, among breeders of horses and cattle, the production of twins is, with a view to their interest in both mother and offspring, not looked upon with favour. In the sheep there is such a frequency of twins, and even of triplets, that there may be some hesitation in classing it with uniparous mammals.

In the pluriparous animals, on the other hand, uniparity is uncommon, and pauciparity is an indication of reproductive weakness or imperfection, while a just degree of pluriparity is natural or physiological. It is remarked, says Spencer, by Buffon that when a sow of less than a year old has young, the number of the litter is small, and its members are feeble and even imperfect.

The domestic hen, in its fertile career, admirably illustrates the rise and decline of pluriparity, and the variations are in accord with the great law of age which holds good in women and in all living beings. Its first and its last productions are small in size, and are believed to be peculiarly liable to be addled or without yelk, or to be otherwise incapable of being hatched. In its first year, according to Geyelin, it produces only 15 or 20 eggs; in its second, 100 or more, up to 120; in its third year, from 120 to 135, and here the climax of fertility is reached; in its fourth year it produces from 100 to 115; in its fifth, from 60 to 80; in its sixth, from 50 to 60; in its seventh, from 35 to 40; in its eighth, from 15 to 20; in its ninth, from 1 to 10. The fertility rises quickly to its summum in the third year of life, and more slowly fades to its disappearance in the tenth year of life.

In like manner the bitch and pig begin their fertile course with a small number, which year by year rapidly increases; and after a few years, whose number I cannot give, again decreases, till fecundity disappears, the last production being often a premature or a dead fœtus. The pluriparous animal has its best young when its progeny is most numerous. The best young may be so described, as in pups, on account of their intelligence, docility, or special talents; or they may, as in a litter of pigs, be best because they are large and easily made to grow to great bulk or weight. In the case of the bitch, it is impossible to reduce to an exact statement the value of pluriparity, but it is no doubt, very great; and while it is the case that when most in number are produced, there is also most in weight; the statement of weight of the pups gives no idea of their value. In a litter of pigs, the value of pluriparity is a simpler matter, being estimated almost entirely by weight and capability of rapid growth; and both may be very well stated in figures.

The uniparous mare has a foal which may be valued partly for bulk, especially if it is to do rough, heavy work; but the bulk of a foal bred in the racing stud is a matter of comparatively little moment; and I daresay all will agree that the nobler the breed of horses, or the higher the qualities expected in them, so is bulk in the foal of less and less importance, and so also is pluriparity less and less desirable.

We have already used estimates of weight and length of single children as indications of fertility in woman; and if weight and length of twins were a test of paramount import, then twinning would, correspondingly, connote fertility, as 12 lb. exceeds 6½lb. or 7lb. But there are higher qualities than the combined weights and lengths, and it is these higher qualities that are deficient in twins. Weight and length are valued merely as indications of general health and full development of individuals, not of twins.

Pluriparity in uniparous animals is rare, and for its study great accumulation of instances is required; and knowledge regarding it in these animals is tardily gained. Pluriparity in some common domestic animals is an every-day matter; and without any deliberate study its variations strike even the obtuse, a class often specially sensible of the pecuniary advantages of the higher degrees of pluriparity. It is the striking characters and advantages of high degrees of pluriparity in pluriparous animals that have led to the general adoption of the erroneous opinion that pluriparity even in the uniparous animals, as in woman, is an unqualified sign of fertility. In pluriparous animals, especially in the common hen, the quick rise and more gradual decline of fecundity is plainly observed, the climax in the hen, as in other pluriparous animals, being marked by the highest number of annual production or in a single brood or litter. In woman there is the same kind of variation, but in her it is a decline from occasional pluriparity to the production with due intervals of the best kind of single births; and the rise is back again to occasional pluriparity and hurry of births one after another.

In the common hen the rise to the climax occupies three years of life, and the more gradual decline occupies six years, according to Geyelin's data, already given. In woman the decline to the lowest, if we count roughly, from fifteen to twenty-five years of age, occupies ten years, and the more gradual rise, from twenty-five to forty-five, occupies twenty years. In the hen the rise is from 15 to 135, and the decline from 135 to 1. In woman the decline is from about 1·02 to 1, and the rise again to about 1·02. There can be little doubt that a similar rise and fall, or fall and rise, are to be found in the history of the fertility of other living things. The curve of this climax and anti-climax is not a part of a circle. Dr. Routh, in a valuable paper on "Procreative Power," published in the *London Journal of Medicine* for 1850, describes this curve, representing what he calls the inclination of procreative power, and thinks the circle is perhaps the nearest that could be selected; but the circle cannot be made to represent the figures on which he relies. He makes the age of greatest fecundity in woman twenty-six; and the climax and anti-climax may be partially indicated by the following figures, which he gives:—At fifteen years of age the figure is 22; at twenty it is 82; at twenty-six it is 100; at thirty it is 92; at thirty-five it is 74; at forty it is 54; at forty-five it is 39.

In leaving the subject of twins, it is natural to refer to malformations and monstrosities as showing weakness or disorder of the reproductive powers, but on this point I have no good detailed evidence to adduce meantime. Yet it is well known that a great body of opinion is in favour of the view, and there are many facts pointing in the same direction. In the course of these Lectures I have frequently mentioned such opinions and facts, but the subject is well worthy of special study. Here I would only refer to the frequent combinations of idiocy and malformation, of idiocy and twins, of idiocy and premature or post-mature maternity, of malformation and twins, of interbreeding and malformation, of interbreeding and sterility, as combining to form an argument that may, if worked out, be found to be conclusive on this question.

Experiments in producing malformations and monstrosities in the common fowl have been very fruitful in results, and demand caution in judgment as to the potency of such influences as age of the mother. Especially interesting in this view is the recent discovery of Dareste that mere delay of incubation, in the case of the eggs of the common fowl, is a cause of malformation in the chick.

TWO CASES

ILLUSTRATING THE SUCCESSFUL EMPLOYMENT OF THE COLD DOUCHE.[1]

BY W. H. BROADBENT, M.D.

CASE I. *Delirium Tremens.*—The patient was a gentleman aged about thirty-eight. His constitution was thoroughly broken by excesses, especially alcoholic, and he had had several previous attacks of delirium tremens. He had been under my care in one of these in November, 1876, which had been ushered in by severe hæmoptysis followed by violent convulsions; and the case had been remarkable from the fact that the characteristic delirium and tremor returned several times after a long sleep and complete recovery of the mental faculties. The first treatment was by digitalis and bromides, no alcohol being allowed, but beef-tea being given freely. In four days there was sound sleep, out of which the patient woke apparently well. The symptoms, however, gradually returned, and on the third day he was as bad as ever. The bromides and digitalis were again given, brandy being now added to the beef-tea, on the supposition that the relapse might have been due to absence of stimulants when the patient's strength was reduced by loss of blood. There was little apparent improvement, and chloral was given with the bromide, when at length sleep was procured. A relapse followed even more promptly than before, upon which morphia was administered subcutaneously, in doses of half a grain. Again sleep was obtained, with apparent recovery, but all the symptoms returned, and twice more was this recovery under morphia and subsequent relapse repeated. I now took advantage of the first moment when such a proceeding could be considered safe, and took the patient out with me. I made him name all the streets we passed through, kept his attention constantly occupied, and when I had to make a visit told the coachman to keep moving, so that he could not leave the carriage. He always had a story to tell when I rejoined him of two women who had been with him "fighting like the devil," and in his imagination we ran over and killed scores of children. However, he slept after the drive, and afterwards he was sent out daily with the nurse in a carriage till he was quite well. I was called to him again on Dec. 6th, 1878, and found him suffering from severe delirium tremens, which had been carried on for some days. He was well plied with beef-tea, had digitalis and bromides in full doses, and, finally, with great reluctance, morphia in grain doses subcutaneously, without effect. On the night of the 9th he was in a condition of extreme exhaustion, the face pale and haggard, the eyes wild, the skin bathed in perspiration, the pulse soft and small, frequent and irregular. He was almost too feeble to turn his head to follow the images of his fantasy, but was constantly muttering and exclaiming, while his fingers fidgeted with the bedclothes, and every limb, or almost every muscle, was the seat of jactitations. Dr. W. A. Smith, now of Newport, Essex, remained with him all night, and on the morning of the 10th reported that there had been no sleep, and no cessation of the mutterings and jerkings, and that two or three times he thought he was dying, the pulse having become imperceptible, the countenance livid, and the voice almost inaudible. It was obvious that the nervous system would not respond to drugs of any kind, and that unless it could be roused by some means or other the patient had not many hours to live. I resolved, therefore, to try the douche. Ice-cold water was brought, and a large bath sponge; the patient was stripped to the waist, arrangements were made to protect the bedclothes, and then the sponge, as full of water as possible, was violently dashed against the head, face, neck, and chest. This was done two or three times, the skin being quickly and roughly rubbed dry between with a coarse towel. I will not attempt to describe the gasping and sputtering and impotent swearing. The process was repeated on the back, and the patient then being made comfortable was told to close his eyes and go to sleep, my hand being firmly placed in his. This he did at once, but in about five minutes he awoke, apparently disturbed by the jactitations, which continued to be violent. He was obviously better, the pulse more full, firm, and regular, while the face had warmth and colour. During the few minutes of sleep the perspiration

[1] Read before the Medical Society of London, March 5th, 1883.

could be seen to form drops on his forehead, and roll off almost in a stream. He could not be made to go off to sleep again, and as his agitation increased, and he employed his renewed strength in struggling and shouting, the douche was again administered as freely as before, and he was afterwards commanded to keep his eyes shut, and go to sleep as before. He obeyed, sleep came almost instantaneously, and, in spite of the jerking of the muscles, lasted three hours. On waking up this time he asked where the doctor had got that water from, and was there any more like it. If there was he would have it used again. Used it was by Dr. Smith energetically, after which the patient slept continuously for twenty-four hours, only waking to take food. Convalescence followed quickly and satisfactorily. Delirium tremens seems to have gone out of fashion, and I have not seen a case since this.

CASE 2. *Sleeplessness and Pyrexia after Childbirth.*—I was called on the evening of June 3rd, 1881, to see a young married lady who on May 30th had been confined of her first child. The labour had been prolonged and severe, the perineum had been ruptured, and the bladder paralysed. From the setting in of the labour, and it was said a day or two before, there had been no sleep whatever. I was detained, and did not reach the patient's house till 11.30 P.M. She was under the care of Mr. Ord of S' eatham-hill, whom I met in consultation, and who gave me the above account of the case. Besides the sleeplessness there were pyrexia and severe abdominal pain with great tenderness in the left iliac fossa. The temperature on the previous evening had been 104·5°, on the morning of the day on which I saw her 104°, and at the time of my visit it stood at 104·2°. The patient complained of severe pain in the head, was restless and tossing herself about in bed, the face flushed, the eyes bright, the expression wild and anxious, the skin perspiring everywhere, the pulse 120, and the milk was suppressed. On examining the abdomen it was found to be full and large, but not tense, and the respiratory movements of its walls were not arrested. There was great tenderness over the left iliac fossa, but it was complained of on slight contact and superficial pressure, and not much increased by deep pressure. Opium had been given in various forms and bromides, and, as need scarcely be said, all the precautions against septic infection of the perineal wound had been taken. In deciding to recommend the employment of the douche I concluded that the abdominal respiratory movement excluded peritonitis, while the character of the pyrexia was not that of puerperal fever or septicæmia; the local tenderness, again, in the left iliac fossa was not accompanied by any tumefaction suggestive of pelvic cellulitis or ovaritis, and, as has been already said, it was remarkably superficial. It seemed, therefore, that the pyrexia and the sleeplessness were what we had to deal with, and that if they could be overcome there was every reason to expect that the patient would do well; while it was obvious, on the other hand, that persistence of a temperature of 104°, with entire absence of sleep, was attended with grave peril. It was agreed that she should be sponged all over with tepid vinegar and water, and that to the head, chest, and back the cold douche should be applied in the way described in the previous case. These measures were carried out; and, as I was informed by Mr. Ord, the patient speedily fell into a calm sleep, the pain in the iliac fossa subsided, and the temperature fell. There was no further complication, and satisfactory convalescence followed.

DONATIONS AND BEQUESTS TO MEDICAL CHARITIES. Miss Baxter, of Balganies, has contributed £1000 to the Dundee Royal Infirmary.—By the will of the late Mr. John Williams, of Debden Hall, Loughton, £300 is bequeathed to St. Luke's Hospital; £250 to the City of London Truss Society; £200 to the Victoria Hospital, Victoria Park; and £100 to the City Dispensary.—Mr. Henry Brown, late of Plymouth, bequeathed to the Plymouth Hospital £500; to the Public Dispensary and to the Eye Infirmary of the same town, £200; and £100 respectively to the East Cornwall Hospital and the Cornwall Infirmary.

LAST week a man, thirty years of age, is said to have performed, for the amusement of a group of idlers at an inn in Leeds, the feat of swallowing a sword and poker together. In endeavouring to withdraw them the poker slipped from his grasp, and was eventually withdrawn by a bystander after the foolish fellow had been turned head downwards. He was taken to the infirmary, but appears to have escaped the serious injury which he richly deserved.

THE

ETIOLOGY OF DIPHTHERIA, THE NATURE OF ITS CONTAGIUM, AND THE PHENOMENON OF SUDDEN DEATH OCCURRING IN IT, RECONSIDERED.

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(Concluded from page 447.)

THE contention of my argument regarding the special contagium of diphtheria is as follows. Either this cell-stratum of Luschka or some other developmental cell structure belonging to the affected locality undergoes that alteration in its capabilities already referred to the circumstances of the disease through which it has passed. The nature of this changed capacity is that, having been designed to take part in such slow formative processes as belong to equable growth—the replenishment of normal wear and tear,—these cells have been impelled by the conditions of a violent inflammation to compress into the space of a few hours the developmental energies they were designed to exhibit only through the progress of years. Thus, started into activity by a superabundance of nutritional supply, and accelerated by a vast increment of heat, they rapidly multiply in number as they approach the surface, die, and are shed; their life history is played out before they could become incorporated with structures of which they were designed to form integral parts. This hot "riot" of cell life and death, taking place as it does quite near the surface, the process of shedding will be a rapid one, and many cells will escape that have not yet completed the *rôle* of growth which ends in destruction. Many will have started only on their course; others will be more advanced; and when set free from their surroundings, it requires only their transference to a suitable soil to enable them to complete the process already commenced. Neither have they lost their structural affinities. A paramount condition of the completion of their energies is that they be conveyed to such a tissue as complies with the histological relationships of their original situation. Once replanted in such congenial soil, these rapidly growing cells are not only capable of completing their own development, but also of exciting a corresponding premature activity on the part of the analogous structures with which they are brought into contact. On the degree of vessel-response to the tissue demand for more pabulum to satisfy the new process depends the character of the inflammation now established. This resolves itself into a question of amount of vaso-motor inhibitory force with which the centre receiving the demand is able to meet it. Obviously the intensity of the process will be proportioned to the prior depletion of vaso-motor energy which the subject has already undergone. Accordingly, these growing cells, cast off as above described, are potential diphtheria germs; and if the patient to whose analogous tissues they are transferred present the required state of vessel paresis, they become *de facto* capable of generating the disease in the subject so receiving them.

It is of great service to recall here what happens when the individuals who entertain these germs have not experienced the preparatory depression necessary to constitute what I now venture to call the diphtheritic diathesis. The experience of every family physician will enable him to substantiate my statement that nearly all the adult occupants of a house where diphtheria is rife, and who are brought within reach of the contagium, do suffer from sore-throats. But these, in the cases now referred to, are not diphtheritic throats. They are simply inflamed, often severely so, and may even exhibit the œdematous type. Thus, I have many times seen the parents of diphtheritic children, also the servants and nurses attending them, successively fall ill with attacks of faucial inflammation of varying degrees of intensity. So much is this the case that one may not infrequently witness in the different members of the same household the three phases of catarrhal, phlegmonous, and diphtheritic sore-throats at one and the same time.

This circumstance appears to me to have the value of a crucial experiment, tending directly to support my position,

because the facts of the case leave no room for doubt that the exciting causes of these simple inflammatory attacks are the emanations of the original diphtheritic patient. Now, if there is anything specific in the nature of the diphtheritic germ, it is contrary to all analogy, as well as to all experience, that it should excite one disease in A and another disease in B. The obvious inference, indeed the only logical one, is that the element of specificity resides in the subject, and not in the germ. This specificity is, as is already stated, the inability on the part of the patient to resist the requisite blood-supply necessary to feed the germ-excited tissues to the diphtheritic point; it means the loss of vaso-motor control over the vessels implicated, and is the direct outcome of previous subjection to an exhausting environment. Respecting the possibility of croupous or diphtheritic membrane being formed spontaneously—i.e., idiopathically—the following apposite quotations should be noted:—

Billroth, "Surgical Lectures," p. 100, says that in large wounds, especially in fistular granulations, a yellow rind sometimes forms on the granular surface, and is readily detached. It consists of pus cells very firmly attached together. "Although I have sometimes found coagulating filaments between the cells, they do not always occur; hence we must suppose that the cell-body, the protoplasm itself, is transferred into fibrine, as occurs in true croup, and especially in fibrinous deposits on serous membranes. Under favourable circumstances it may result in destruction of the granulations, in a true diphtheria of the wound, to be treated of hereafter as hospital gangrene. Usually croupous inflammation of a wound ends in sloughing of the diseased granulations, whereupon new ones spring from its depths." Virchow's view of croupous inflammations generally is that by the inflammatory process the tissue may be placed in a condition to cause coagulation of the fibrinous solution infiltrating it. According to A. Schmidt, in certain quantitative and qualitative irritations of the tissue, more fibrogenous material than usual escapes from the capillaries. Virchow has shown that by repeated irritation simple serous exudation may become fibrinous or croupous, as when by repeatedly blistering a previously healthy surface, it becomes covered with a fibrinous layer, which is almost entirely composed of newly formed cells. Cognate to this evidence adduced from a wide range of analogies by authors well fitted to judge of their pathogenic meaning, is the case of a lady in whom a true membranous croup was rapidly induced by the accidental ingress of eau-de-Cologne into the larynx through the left nostril, to which it was applied while the patient was in a fainting condition. The case is recorded p. 95 *et seq.* of the "Report of the Committee of the Royal Medical and Chirurgical Society on Membranous Croup and Diphtheria." On the fifth day, ninety-two hours after the accident, "a perfect cast of the larynx, trachea, and upper part of the left bronchus was expelled entire in one piece." Patches of membrane also occurred in various parts of the naso-pharyngeal tract. There was no diphtheria in the neighbourhood. Making allowance for the fact that microscopical examination was made some considerable time after expulsion, there were no appearances by which this cast could be distinguished from a true diphtheritic one. Such exudations, when occurring in the closed sacs of serous membranes are recognised as the orderly outcome of simple inflammation. The preceding quotations carry out this recognition to tissues of almost every type, while the concluding one brings the connexion home to the very seat of diphtheria, inasmuch as it shows a membranous cast to have been formed in the naso-pharynx, larynx, and trachea, by the application of a definite local irritant.

The culmination of the disease in *sudden death* is the last feature to be examined. It remains to show how the adoption of the hypothesis of vaso-motor exhaustion as the essential factor in the causation of diphtheria supplies a constant explanation of this symptom. The phenomenon in question hinges upon the fact that the loss of reflex vaso-motor control extends to the nervi vasorum of the nutrient vessels of certain nerves, as well as those of the vessels distributed to the mucous membrane. It will assist its explanation to compare it with a slighter, or penultimate, degree of this latter kind of paresis, sometimes met with in the œdematous phase of throat inflammation, which I regard as occupying an intermediate position between catarrh and diphtheria. As I know of no better example than was afforded in a recent personal experience of my own, I will briefly quote it. In the spring of 1879, when considerably prostrated in health by an attack of influenza, I had occasion to inspect very closely the throat of a patient who was the subject of catarrhal diphtheria, and shortly afterwards was exposed to a sharp easterly wind. The same evening I was conscious of having acquired some severe throat mischief, which in the course of the next day assumed the proportions of what is indifferently termed phlegmonous, œdematous, or hospital sore-throat. Œdema of the epiglottis was an early symptom, quite prohibiting the act of swallowing by the intense pain occasioned by any attempt to perform it. Forty-eight hours from the commencement of the attack the œsophagus was paralysed. It showed itself thus: Having endured a fast up to this point an insufflation of morphia enabled me to get down first some beef essence, and then about a tablespoonful of milk. In the course of two or three hours, when the local influence of the anodyne was subsiding, there ensued a sort of cough, easy, and almost effortless, accompanied by expectoration. My astonishment was great to notice that the ejecta consisted first of the milk last swallowed, uncurdled and fluid as taken, and then the beef essence, also unaltered. Clearly these nutrients had not passed farther down the gullet than the space they occupied, as was shown by the fact that they were not mixed nor in any sense changed in character when rejected, which would have been the case had they passed into the stomach. The inference seemed obvious—viz., that there existed a paralysed state of the lower portion of the œsophagus, which would not allow even fluid food to pass through it. If this conclusion be a correct one, it appears to admit of the following explanation: The plexus gulæ is largely constituted by the vagus, augmented by branches from the third segment of the upper cervical ganglion. These nerves were already paralysed on the second day of the attack in my case. It has already been shown that the local lesion in the fauces was the result of vessel-dilating impulses proceeding from the same vaso-motor centre as contributes the sympathetic portion of the plexus gulæ, but which are distributed upon the vessels of the pharynx and adjacant tissues exhibiting the disease. Other vessels are furnished with sympathetic fibrillæ from the same source—notably those which are the nutrients of the œsophageal branches of the vagus nerve itself. These also participate in the dilating waves, and become hyperæmically distended, the result being to strangle the contained motor fibres, and for the time being annihilate their function. The vermicular action of the gullet, which is excited by the presence of food, could not occur in consequence of the nerves being thus rendered incapable of transmitting impulses. Hence the food remained in the œsophagus, the horizontal position being sufficient to cause it to run out.

In the foregoing case the dilator impulse was, fortunately for its subject, limited, not only in point of time over which it extended, but also in the range of nerve ramification which it influenced. For, with the preceding explanation as its clue, it is easy to see what would ensue were the nutrient vessels of the vagus more largely involved in it, as is the case in true diphtheria when the exciting cause of the paresis is more intense, from the greater exhaustion of the vaso-motor ganglia participating in it. Because, almost the next set of branches of the vagus affected in its descensive extension is the cardiac set. When it is remembered that in diphtheria the vessel dilating impulse is bilateral usually—i.e., both vagi come under its influence, should this condition of hyperæmia extend to the cardiac branches of the pneumogastric on both sides,—it is easy to see that death must ensue from the fact that the heart being cut off from the inhibitory centre will run on at a pace tending to exhaust its contractile powers. And further, that such a cardiac breakdown is peculiarly apt to occur on the sudden rising of the patient from the recumbent position. I am aware that the occurrence of sudden death has long been referred to the vagi somehow or other. But the exact how has not been defined. Nor, I contend, is it possible to do so without the application to it of the theory of correlated nerve tracts. It has been supposed in some way to be an effect of that mysterious and subtle agency the diphtheritic poison, operating through the blood on the nerve centres. But if I am right, the vagus is only implicated in so far as by an anatomical accident, or rather coincidence, this nerve of vital import happens to have its blood-supply regulated by vaso-motor nerves which efferently respond to the original vessel-dilating impulse, afferently exciting the whole phalanx of symptoms. The cardiac branches of the vagus, it will be seen, are not paralysed centrally, but are only mechanically hindered from transmitting impressions

by the sudden afflux of blood, which for the time being abnegates their conductive functions. It is probable that this oppressed state of the vagi is operative to a less extent in all cases of severe diphtheria, and that it accounts for the gradual sinking of the patient, when death is said to begin at the heart; or further, by a similar implication of the pulmonary branches, death may ensue by arrest of the respiratory function. That it is the permanency of the results of this congestion of the vasi-nervorum—i.e., of the resultant effusion within the nerve sheaths, which explains the paresis of the palate muscles, as well as those of other regions, remaining after recovery from the disease, cannot I think be doubted. It is unnecessary further to consider this symptom, as it is foreign to the scope of the present communication. For the same reason I must forego the discussion of the parallel examples of paresis of the muscles of the Eustachian tube and palate, frequently seen as the result of every persistent post-nasal catarrh, though this symptom is of peculiar interest, inasmuch as it tends to establish the complete analogy between the three forms of throat mischief already alluded to.

The length to which this paper has extended compels me to defer entering upon the numerous corroborative proofs of the correctness of the conclusions herein advanced. It will suffice the objects in view briefly to enumerate the inferences arrived at.

1. Diphtheria is an idiopathic inflammation, the peculiar type of which is imparted by previous exhaustion of sympathetic nerve force; that the loss in question occurs chiefly in children, in whom the nutritional centres are normally in special activity; and that this exhaustion acknowledges chiefly climatic conditions possessing in themselves no other peculiarity than is implied in the tendency to lower the vital energy of the subjects exposed to them. The patient so circumstanced may be said to exhibit the diphtheritic diathesis. During its continuance exposure to a slight exciting cause, such as a common cold, will suffice to develop a typical attack of diphtheria. Under these circumstances the disease may be said to arise *de novo*.

2. When the diphtheritic process is established, in whatsoever way it may be brought about, the element of contagium is introduced. Though not, perhaps, yet capable of exact histological identification, this is nevertheless a definite tissue element, forced into rapid growth. In this state it is liable to be thrown off with the detritus of the process, and is capable of continuing its developmental energies, and of exciting a similar action in the corresponding tissues of another subject, if it come in contact with these, providing the subject be already predisposed to exert insufficient inhibitory nerve-power to resist the tissue demand for such an accession of blood as will suffice to feed the new process to the diphtheritic point. The latter quality resides entirely in the vaso-motor resources of the patient.

3. The explanation of the symptom of sudden death occasionally witnessed in the disease is shown to depend on a similar paresis of the nutrient vessels of the cardiac branches of the vagus, as was seen to occasion the local lesions in the throat when affecting the vessels of this area. In consequence of the engorgement of the circulation within the nerve sheaths, and the jugulation thereby of the contained fibrillæ, the latter are unable to transmit inhibitory impressions to the heart, which accordingly ceases to beat after a continuance of rapid action has exhausted its inherent vitality.

Harley-street, W.

NOTES OF

A CASE OF EXTRA-UTERINE PREGNANCY (TUBO-OVARIAN); RUPTURE OF CYST; DEATH.

BY WM. BERRY, M.R.C.S., L.R.C.P. & S. ED.,
HONORARY SURGEON, ROYAL ALBERT EDWARD INFIRMARY, WIGAN; AND HONORARY MEDICAL OFFICER TO THE CONVENT OF NOTRE DAME, WIGAN.

THE infrequency of extra-uterine pregnancy and the obscurity of symptoms, as well as the fatality of the occurrence, have prompted me to send for publication in THE LANCET the notes of a case which recently came under my care in the infirmary here. I am indebted to Mr. J. H. Jackson, M.B. Ed., C.M., our junior house-surgeon, for the notes of the case.

Mrs. ——, aged thirty-five years, a well-developed woman, of bilious temperament, was admitted to the Royal Albert Edward Infirmary, Wigan, on Dec. 2nd, 1882, with the following history:—She had had four children, two dead-born, and two others which had died in infancy. She had always been healthy, and there was no history of any previous disease. Her husband had deserted her, and left the country five months before, and since she had been in service as a housekeeper. Menstruation had been irregular, and she had suffered severe pain at the menstrual periods, and had been treated for colic just before coming to the infirmary. On examination there was slight tenderness over the right ovary on pressure, and dulness on percussion, and there appeared to be some abdominal enlargement, though this was not very marked. Her bowels were habitually constipated, and she suffered from piles. The heart and lungs were healthy. An enema was administered and the bowels unloaded. Rest was enjoined and warm applications applied. A stomachic aperient mixture was ordered. The temperature was taken daily, and was normal till December 8th, when it rose to 100° F., there being now increased tenderness over the ovarian region.—9th: Temperature, morning 102·4°; a great deal of pain over both ovarian regions. A morphia pill (quarter of a grain) was ordered every three hours, and a diaphoretic mixture; milk diet.—10th: Temperature 102·2°; pain not so severe, but a good deal of tenderness on pressure. On vaginal examination a swelling behind the posterior lip of os could be distinctly felt, but no fluctuation could be made out. The vagina and os uteri were hot and tender to the touch. On the introduction of the sound the uterus was found pushed forward by the swelling and anteverted, the cavity, however, was normal in length. Ordered pills to be continued and poultices of linseed meal applied, three ounces of brandy daily in soda water to relieve the sickness and feeling of weakness.—11th: A little easier, still tenderness on pressure.—12th: Menstruation came on and the temperature fell to 99°. She felt better and the pain was less.—15th: The temperature remained at 99° till to-day, when it rose to 104° with symptoms of general peritonitis. Ordered salicylate of soda fifteen grains, every three hours, and poultices constantly applied.—16th: Temperature 103°; not quite so racked with pain.—17th: Temperature 101° morning, 104° in the evening. She had a great deal of pain and considerable tenderness on pressure on the right side. Pleurisy and pneumonia could be made out.—18th: Temperature, morning 104°; evening 104·4°; no change.—19th: Temperature, morning 103; evening 103·4°; pain still severe.—20th: Temperature, morning 101°; evening 102·4°. Vomiting set in, and nothing could be retained on the stomach.—21st, 1 A.M.: Mr. Jackson was called to her; she was in a state of delirium and collapse set in. She died at 7 A.M.

Post-mortem examination by Mr. Jackson, fifty hours after death.—Fluid was found in the right pleura, and red hepatisation of lower lobe of lung; heart healthy. On opening the peritoneal cavity a considerable amount of fluid escaped; the peritoneal surface of the bowels was inflamed and adherent in parts. The cavity of the pelvis was filled with clotted blood; uterus somewhat enlarged, and showed signs of congestion; cavity empty. The right ovary was found enlarged, and removed for further examination. Liver pale, other organs healthy. On making an incision into the removed ovary it was found to consist of a large sac from which blood escaped, leaving an embryo an inch long; the eyes, arms, and legs were distinctly visible. The true ovarian tissue did not surround the sac, but formed part of the whole mass outside the wall of the sac. The Fallopian tube could not be well made out, but a small perforation in the sac was visible, through which the blood had escaped into the pelvic cavity. The placenta was well formed and adherent to one side of the sac.

Remarks.—This case is peculiarly interesting, especially as pregnancy was never even suspected. Menstruation had never been absent so far as could be ascertained, though irregular as to time of occurrence, and there was considerable pain before the commencement of the flow. Morning sickness, fulness of the breasts, and malaise were either not present or overlooked. The progress of the case in the wards was peculiar. First we had apparently ovarian congestion or localised peritonitis, then pelvic cellulitis, afterwards symptoms of perforation, collapse, and death. Judging from the size of the fœtus, pregnancy had commenced two and a half to three months previously.

Wigan.

FOUR YEARS' TREATMENT OF INSANITY AT GARLAND'S ASYLUM, WITH REMARKS.[1]

BY J. A. CAMPBELL, M.D., F.R.S.E.

IN THE LANCET of August 2nd, 1879, I published a paper[2] dealing with the results of five years' practice at Garland's Asylum, discussed the treatment which I had used in several recognised forms of excitement, and summarised my experience of treatment by sedatives in maniacal excitement, and hypnotics in the insomnia associated with the different forms of mental disorder under care during that period. I also dealt with several agencies valuable in curative treatment. In all walks of life it is well to look back on one's doings, and if possible to profit by experience. In the practice of medicine, when so much is at stake to the patient, it is clearly a duty to see what the results have been—to see where improvement can be effected, and how.

To me it does not seem out of place to discuss the treatment of insanity in a general medical journal. The more asylum physicians can keep up their interest in, and their general knowledge of, their profession, the better for them and the special study they are engaged in. A large proportion of the cases treated by the medical profession in private practice are functional or organic diseases of the nervous system, and a very great proportion of the patients sent for treatment to a county lunatic asylum would, if they had the means, be treated at home. I think that I may quite safely assert that county asylums perform functions now quite different from what they did, say, fifteen years ago, that a change has come over the character of the inmates sent to them, and that asylums now more nearly resemble hospitals than they did. Patients are sent in at an earlier stage of their disease; this is in consequence of repeated mention in asylum reports of the evils of delay, and the attention which has been called to the very much greater curability of those whose attack previous to admission had been of limited duration. This change should have greatly raised the rate of recoveries in asylums, and would have done so but for the counterbalancing changes—the first of which is undoubtedly the inducement offered for sending any cases which can be certified as insane to an asylum so as to enable the Government subsidy to be received for their maintenance. This subject has been commented on by the Commissioners in Lunacy, and by many medical superintendents of asylums. Dr. Maudsley[3] clearly and accurately indicated what the probable tendency of this legislative action would be, and in discussing the matter, he says, "just as in olden times a reward of so much for each wolf's head led to the rapid extinction of wolves in England, so we may expect that this premium on lunacy will tend to diminish materially, and perhaps to render gradually extinct, the race of sane paupers in England." Other influences have also tended to alter the character of the admissions. The working classes, especially those resident in towns and villages, are now less tolerant of eccentricities in their aged relatives. On signs of mental decay presenting themselves, they gladly, if possible, get them consigned to an asylum; by this means they free themselves of care and trouble, and if they are mulcted in the expense or the portion of it which falls on the parochial rate, they probably find it cheaper than keeping their relatives at home, while in most counties their knowledge of the manner in which the patients in asylums are dealt with makes them quite willing that they should be so cared for. If the question arises between workhouse and asylum, they go in for the latter. Then the sort of weak-minded "ne'er-do-weels" from the lower classes are more easily disposed of by being sent to an asylum than in any other way. While the want of definiteness in the lunacy law as to the care and provision for cases so far recovered as not to need asylum treatment, prevents the relief which might otherwise be available by the disposal of this class of case.

To show how admission of aged patients has increased I may mention that in this asylum, during the ten years ending 1872, 25 patients above seventy years of age were admitted (2·7 per cent. of the total admissions). In the ten years ending 1882, 50 above seventy (or 4·2 of the total) were admitted. At times asylum recovery and death-rate are prejudicially acted on by carelessness in medical examination prior to admission; patients are sent in a dying state, when removal hurries the end, or delirious conditions, the result of other disease or accident, are mistaken for insanity. I discussed this at length lately.[4]

In asylum practice at present there are many outlets for energy, in the details of general management, in beautifying the surroundings, in increasing the sanitary safeguard, in extending the industrial occupations, in increasing the real liberty of those under treatment, in furnishing suitable forms of amusement, recreation and intellectual enjoyment, as much as in providing a varied, nutritious, and economical diet for the patients; but in dealing with these matters they should be looked upon merely in the light of necessary details, not made matters of primary importance to the exclusion of the real medical work, of observation, treatment, and research which is necessary to keep this branch of our profession on a level with others. Costume balls, polished floors, unlocked doors during so many of the twenty-four hours, choral services almost equal to those of a cathedral, æsthetic painting and papering, and true harmony of colours in the decorations, should only be considered useful so far as they do good to the patients; after they pass this, it is questionable whether they do not merely degenerate into forms of quackery made use of for advertisement.

Why do a large proportion of the cases admitted into asylums become demented? Why do a large number of those who are in good bodily health become demented? Why do cases recover from several attacks of excitement, and then, after one attack which has in no way differed from former attacks, become demented? Does dementia occur to a greater extent in one asylum than in another, and, if so, can the cause be ascertained? Would it not be well to investigate into the disparity between the recovery rates under different forms of treatment, and in different asylums? Is it from want of individual attention that in many cases failure of recovery takes place? Would a larger proportion of medical officers or of attendants prevent this great yearly increase of chronic lunacy? Free discussion of modes of treatment, with comparison of results, seems to me the only way to arrive at a solution of these important questions. General medical and surgical subjects are discussed over and over again. Forms of treatment and results occupy the time and attention of the thinking portion of our profession, and the pages of our medical papers teem not with new discoveries, but with minor improvements in well-known modes of diagnosis and treatment of given diseases.

In some respects, however, so far as I see, our treatment of insanity is before our knowledge of the real causes and physical changes which produce it, and must remain so until we proceed, as in hospitals attached to the medical schools of the present day, to investigate more closely than we do into the state not only of the organs but of the excretions. We have undoubtedly of late years progressed in this direction, but the proportion of medical officers in most asylums is too small for the real work which should be done,[5] and which must be done if our knowledge in this branch is to keep on a level with what is being done in other walks of our profession. Professor Gairdner, in his Presidential Address[6] to the Medico-Psychological Society last year, in speaking of disease generally, has expressed most succinctly and lucidly what greatly constitutes the general principle of treatment in force in many asylums at present. "We have come to aim at treating not so much the disease as the man affected by the disease, administering our remedies not upon the principle of warring with an occult foe, in some obscure corner of the organism, but on the far higher principle of dealing with the whole man, and assisting, sustaining, supporting all that is sound in him to overcome what is unsound." During the last four years the treatment in this asylum has been pursued under considerable difficulties, the asylum has been overcrowded and its capabilities have been inadequate to the admission rate. Additions have been in progress at several different points which hampered the work of the institution, and which, by calling for expedients to overcome them, caused energies which might have been better

[1] Read at a meeting of the Border Branch of the British Medical Association at Carlisle, Feb. 22nd.
[2] The Treatment of Excitement by Sedatives or otherwise.
[3] The alleged Increase of Insanity, Jour. of Mental Science, April, 1877.
[4] The Necessity for Careful Physical as well as Mental Examination prior to sending Patients to Asylums, THE LANCET, July 1st, 1882.
[5] Dr. Rayner, Hanwell, has been recently calling attention to this in THE LANCET.
[6] Journal of Mental Science, October, 1882.

employed to be diverted from their legitimate pursuits. I believe the frequent enlargements which have to take place in our asylums are greatly the cause of our slow advance in knowledge in this department. While fully acknowledging that circumstances have prevented treatment from having been pursued in as scientific a method as it might otherwise have been, I yet see in this no cause for withholding a summary of the treatment and results.

During the four years ending 1882, 495 patients have been admitted, 235 have been discharged as recovered, and 152 have died, the recoveries have been at the rate of 47·4 per cent., calculated on the admissions the deaths at the rate of 8·6 on the average numbers resident; these are the general results; but if we look at them from another point of view, and simply deal with the 495 patients who were admitted, the following is the result: 207, or 41·8, have been discharged as recovered, and 68, or 13·7, of the number have died, leaving 191, or 38·5 of the number remaining:—

Table showing the Results of the Four Years.

Years.	Admitted	Recov.	Died.	Remning.	Percentages on total admissions.		
					Recov.	Deaths.	Remning.
1879	112	59	17	26	52·6	15·1	23·2
1880	129	60	28	32	46·5	21·7	24·8
1881	114	53	16	36	46·4	14·0	31·5
1882	140	35	7	97	25·0	5·0	69·2
Totals .	495	207	68	191	41·8	13·7	38·8

Now of the 26 patients remaining from the admissions in 1879, 4 are so much improved that I believe they will yet recover and be fit for outside life; 6 were cases of chronic insanity when admitted; 2 were confirmed epileptics; 3 were Irishmen, with strong predisposition to insanity; 2 of the remaining 11 had delusions and still have them, and the other 9 have not recovered, and I do not know why. An examination of the 32 remaining from 1880 shows 5 improved still improving, and likely to recover; 5 on admission were chronic cases; 5 were epileptic; 2 general paralytic; and 1 a senile case. Of the remaining 14, 6 recovered up to a certain stage; nothing that I can see stands in the way of recovery, but they have not recovered, and probably may not, and I am quite in the dark as to the cause. The 36 that remain of the admissions of 1881 show 7 likely to recover; 2 who may recover; 6 senile cases; 2 epileptics; 3 general paralytics; 5 Irish, who had delusions on admission and who have not improved, appear to have been long insane; the other 11 looked very unpromising from the first. Concerning the 97 remaining at the close of 1882, it is rather premature to discuss them in an exhaustive manner with anything like accuracy, as 38 of them were admitted during the last three months of the year; 7 were imbeciles; 5 were epileptics; 5 were general paralytics; 10 were patients belonging to this county who had for some years been boarded out in another asylum. I estimate that 37 are in a fair way towards recovery, which will, if my prognosis is correct, make a recovery rate of over 50 per cent. on the admissions of last year. I find that of the 191 remaining, 24, or 12·5 per cent., of the number are Irish, most of whom were admitted without a history and appeared to have been insane for a long time. The admission of Irish in this asylum prejudicially affects the recovery rate.

(To be concluded.)

ON A CASE OF

ADDISON'S DISEASE, WITH MARKED DISCOLOURATION OF THE TONGUE.

BY LOFTUS WILKIN, M.R.C.S.

JANE W——, aged thirty-two, came under observation on December 28th, 1882. She stated she was one of a family of eight, all of whom as well as her parents were still living, and enjoying good health. The patient has been married for three years, and has had one child, eighteen months ago, which, however, survived its birth only three weeks. She has not suffered from any previous bodily illness, nor from exposure or injury; but since the birth of her child has been "delicate," and getting gradually weaker, but not sufficiently so to induce her to obtain medical aid. She came down here from the City, where she had previously resided, in June, in order to have the benefit of the country air, and when first seen by me was suffering from severe epigastric pain, which, however, was easily relieved. On examination she appeared to be fairly well nourished; eyes very dark and rather sunken; hair black. The skin presented more or less generally a deep bronze or dusky hue, which was particularly marked about the upper part of the chest, face, neck, and arms, while over the surface of the latter, as on the sides of the neck, were numerous well-defined spots of deep chocolate or almost black colour, and about a quarter of an inch in diameter. The gums and inner surface of the lips and cheeks presented a mottled appearance, owing to the presence of numerous patches of a deep brownish or mulberry tint; while on the posterior part of the dorsum of the tongue was one, nearly circular, patch, central in position, and as large as a shilling in diameter; anterior to it, and occupying the right side, was an irregular-shaped patch of nearly equal size; on the left side were two smaller spots, all being of very dark colour, almost resembling ink stains, while the intervening portions of the tongue were red and natural in appearance. The alteration in her complexion first became apparent to herself and friends soon after the birth of her child, but she did not notice the patches on her tongue till about ten months ago, when they were very small; since then they have been gradually extending, and have attracted considerable attention from herself and husband. Physical examination of the chest revealed no abnormal sounds. There was no cough. No pain or tenderness could be detected on pressure over any part of the abdomen. The bowels were natural. The urine clear; specific gravity 1020; acid; no albumen. Pulse small and weak. She complained of great lassitude and weakness, feeling incapable of getting up; but after two or three days nausea and vomiting set in. This could at first be relieved, but after a time all remedies tried to check it proved ineffectual, in many cases seeming indeed to aggravate it. She was able to retain, however, a fair quantity of iced milk and beef-tea till the termination of her illness. She was put on a mixture containing small doses of solution of arsenic and tincture of steel, but the debility gradually increased. The vomiting became more frequent; epigastric pains and hiccough were occasionally present, but were relieved by an opiate. The pulse at the wrist became imperceptible, the heart sounds very feeble, and she passed quietly away on Jan. 20th, having been only three weeks in bed. Unfortunately, owing to the opposition of her relatives, a post-mortem examination could not be obtained.

Walthamstow.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium

ST. THOMAS'S HOSPITAL.

CASE OF TROPICAL ABSCESS OF LIVER; PARACENTESIS; SUBPERIOSTEAL REMOVAL OF PORTION OF NINTH RIB; FREE OPENING; RECOVERY.

(Under the care of Mr. GEORGE GULLIVER, M.B.)

T. C——, aged twenty-five, was admitted to Arthur ward on Aug. 24th, 1882. The family history presented no facts of importance. Thirteen years ago patient had "gastric fever." In 1875 he enlisted in the army. In 1878 he went with his regiment to Bengal, and that year he had an attack of pleurisy in the left side. He remained in Bengal till 1881, and during his stay there had several attacks of fever and ague, till eventually, at the end of the year 1881, at the expiration of his period of service, he was invalided from Netley Hospital for ague, which rendered him unfit to join

the reserve, as he would otherwise have done. He never suffered from diarrhœa or dysentery; he was a temperate, well-conducted young man, and had two good-conduct badges. A month or two after leaving Netley he was able to take employment as an out-door labourer.

On July 20th, 1882, rather more than a month before his admission, whilst working in the rain, he was attacked with pain in the right shoulder, vomiting, chilliness, and a slight hacking cough, and was obliged to leave off work and go home. These symptoms continued, and in addition his appetite failed; he lost flesh much, his bowels were from time to time relaxed, and he occasionally coughed up small clots of blood. He presented himself as an out-patient on Aug. 24th, and entered the hospital on being advised to do so.

His state on admission was as follows:—A tall, muscular, but considerably emaciated man, complaining of the symptoms just enumerated; complexion very sallow; conjunctivæ slightly jaundiced. Was perspiring a good deal; temperature 102°; heart normal; pulse 80, soft, regular. On the right side of chest there was dulness in front from the fifth rib downwards, and posteriorly the lower quarter of the chest was dull. Over the dull area the breathing and voice sounds were diminished, except at the extreme upper margin of the area where the breathing was tubular and the voice bronchophonic. The left lung was normal; the liver extended two and a half inches below the ribs in the right nipple-line, and the edge was somewhat tender on palpation. The spleen appeared normal, tongue moist, coated with white fur, urine, sp. gr. 1011, no albumen. There was nowhere any indication of an abscess being about to come to the surface. The diagnosis rested between a fluid accumulation in the pleura, depressing and causing secondary congestion of the liver, a suppurating hydatid in the liver, or possibly between the liver and diaphragm, and, lastly, an idiopathic hepatic abscess. He remained in the hospital for nearly three weeks without any active steps being taken for his relief, partly on account of the uncertainty of the diagnosis, and partly because his condition did not appear to call for immediate active treatment. During this period the symptoms remained much the same, that of which he complained the most being the pain in the right shoulder. The liver descended lower till it reached nearly to the umbilicus, and it was tense and elastic to the touch, but nowhere fluctuating. The upper margin of the dulness in the back at the same time ascended till the lower third of the back was involved. His temperature varied from being occasionally normal in the morning to 103° in the evening. With a view to clearing up the diagnosis on three occasions, a puncture was made with a morphia syringe into the dull area of the back. On the first two occasions nothing but a little blood came away, but on the third attempt a few drops of brownish-coloured serum were withdrawn. Though the colour of this was certainly suggestive of hepatic origin, it was not opaque enough to make it certain that it was part of the contents of an hepatic abscess, at least as ordinarily seen. On the afternoon of September 18th, he had a transitory but somewhat alarming attack of dyspnœa, fearing the recurrence of which Mr. Gulliver determined to take active steps for his relief, and accordingly asked his colleague, Mr. Pitts, who was then resident assistant-surgeon, to see the patient. This he did on the evening of the same day. He also failed to detect any appearance of an abscess forming or fluctuation, but on account of the elastic feel of the liver in the epigastrium, being somewhat suggestive of a deep-seated abscess in that situation, he first of all inserted the trocar of the aspirator into the liver at that point, but without result. The trocar was then inserted for some distance at a point between the eighth and ninth ribs and posterior to the mid-axillary line. The result was the withdrawal of a quantity of thick chocolate-coloured matter, such as in the most typical cases comes from an abscess of the liver. In all four pints two ounces came away, and more would have come with ease, but it was thought that sufficient had been done for purposes of diagnosis, and to ensure the safety of the patient against an attack of dyspnœa, and that, moreover, aspiration could be merely palliative and preliminary to making a free opening for the escape of the pus. After the paracentesis the patient had a severe attack of pain in the lower part of the abdomen, which, however, quickly yielded to morphia. The next day there was no pain, and the edge of the liver reached only two inches below the margin of the ribs. There was, however, no diminution of the pyrexia, the temperature being 103° on the afternoon of the day succeeding the operation, and 101° and 102° on the two succeeding days. At the same time the pus began rapidly to reaccumulate, as was indicated by the rapid depression of the edge of the liver, till on the fourth day after the tapping the patient's condition seemed to be much the same as before that operation, his temperature in the morning being 102°. It was consequently thought advisable to delay no longer making a free incision.

On Sept. 16th the patient was placed under ether and Mr. Pitts made an incision just anteriorly to the angle of the ninth rib, and removed subperiosteally a portion of it, about an inch and a half in length. On cutting into the pleura beneath this there escaped some ounces of thin brownish serum of about the colour and consistence of thin beef-tea, and similar to that which had formerly been removed by the hypodermic syringe. A free incision was then made into the liver through the diaphragm, and about three pints of pus of the same kind as had been removed by the aspirator came away through the opening. Two large drainage-tubes were then inserted, being well packed round with gauze to prevent the escape of matter into the pleural cavity. No vessel required ligature. The operation was conducted with the strictest antiseptic precautions. The cavity was not syringed out.

There remains little to record except the almost uninterrupted convalescence of the patient. On the evening of the day of operation the temperature was subnormal, and it did not rise above normal till the twenty-sixth day after the operation. The wound was dressed about every third day under the carbolic spray, the cavity being syringed out with a solution of oil of eucalyptus, the discharge never exceeding two or three ounces. The antiseptic dressings were discontinued on Oct. 11th, and a dressing of carbolic oil and iodoform gauze substituted. The drainage-tubes, which had been shortened from time to time, were finally removed on Nov. 21st, and a few days afterwards he was allowed to get up, whilst waiting his turn of admission to a convalescent home. His convalescence was interrupted by a rise of temperature on Oct. 11th, due to a slight attack of pneumonia at the base of the right lung in the neighbourhood of the abscess cavity, the signs being cough, with blood-stained expectoration, dulness, with crepitation and tubular breathing. The temperature reached 103·8°. For four or five days it remained more or less elevated, but never to such an extent as to cause any serious alarm. For three days after the operation he took milk and beaf-tea only, after that he had milk diet and eggs, and about ten days after the operation he had chicken. His appetite soon improved, and, as soon as he cared for it, he had ordinary diet. In addition he had about three glasses of wine every day. The only medicine which he took was a mixture of a little hydrochloric acid and tincture of nux vomica in water, sweetened with syrup of oranges.

On December 6th the patient went to a convalescent home. On his return, on January 3rd, 1883, he presented himself in the out-patient room in all respects perfectly well. He had become very stout. The wound had healed perfectly, no fistula remaining; and it was not possible to detect that any portion of a rib had been removed. His chest was perfectly normal, with the exception of some slight impairment of resonance at the right base, which was only what one would expect from thickening and adhesions of the pleura at that spot. The liver could not be felt below the ribs.

Remarks by Mr. GULLIVER.—The case is interesting from the doubts which were at first entertained as to its nature, and which were only removed by aspiration; the more so as it was shown at the operation that some ounces of fluid did exist in the pleura, though without doubt due to inflammation secondary to the hepatic abscess. The unusually large size of the abscess necessitated a very free and dependent opening, which called for the removal of a piece of rib. No vessel required to be tied during the operation, and no bad consequences ensued on it. The abscess was reached through the pleural cavity and diaphragm without harm resulting, the precaution having been taken of packing the drainage-tubes round with gauze. The rapid reaccumulation of pus after aspiration tended to demonstrate the futility of that operation for anything more than temporary relief. Lastly, I should say that the complete recovery of the patients was entirely due to the skilful manner in which the operation was performed, and the subsequent treatment carried out by my colleague, Mr. Pitts. I am indebted to Dr. Harley, whose work I was doing at the time of the patient's admission, for permission to publish the case.

NATIONAL ORTHOPÆDIC HOSPITAL.

A CASE OF SPINA BIFIDA SUCCESSFULLY TREATED BY INJECTION OF DR. MORTON'S IODO-GLYCERINE SOLUTION.

(Under the care of Mr. E. MUIRHEAD LITTLE.)

MARGARET E——, aged three weeks, was first seen at the hospital last May, with spina bifida in the lumbar region, and strongly-marked congenital talipes varus on both sides. The tumour in the back was some three inches in diameter, and nearly circular; its walls, except close to the periphery, were very thin and transparent, and of a bluish membranous appearance. At the summit, which was raised more than an inch from the surface of the back, was a granulating sore, the size of a halfpenny. The cleft in the bones appeared to extend between the second lumbar and second sacral vertebræ. The child was pale and sickly-looking, with a somewhat large head. The tumour seemed in no way affected when the child cried. The mother stated that the tumour was increasing in size, and that the child moved its lower limbs very little. She was fully alive to the precarious condition of the patient, and readily consented to an operation as affording some chance of cure.

The mother and infant were admitted on June 1st. On the same day the tumour was aspirated and six drachms of clear fluid were withdrawn, and a pad and bandage were lightly applied. The sac was left three-quarters full. On the 3rd the sac had refilled and was again aspirated, and one ounce and a half of fluid was withdrawn. The child was very restless for several days and started at slight excitation. Cried constantly. On the 14th she was in her usual health. The sac was again aspirated and six drachms of fluid were removed. On the 21st the tumour was as large as ever. Half the contents was removed with the aspirator, and twenty minims of Morton's solution were injected. No bad symptoms followed injection. Next day the tumour was redder and more opaque; the sore was smaller. On the 23rd to be out-patient. On the 27th the tumour was much smaller and firmer. The sore was healed. The tumour having ceased to shrink, thirty minims of the solution were injected on the 28th. Collodion was applied on lint.

From this date the tumour rapidly shrank, and in two weeks had disappeared. The skin had much advanced over the surface, but there was still a membranous portion near the centre. A light truss was ordered as a protection, and the treatment of the talipes subsequently proceeded with. The necessary operations have produced no bad symptoms and the child's general health has improved.

Notes by Mr. LITTLE.—In any future case I should be inclined to discard attempts to obtain a cure by simple aspiration, but inject the iodine solution at once. The former plan was advocated by Dr. Morton in his original paper, but I am not aware whether or no he still follows it. I am indebted to the courtesy of my colleague Mr. Fisher for the opportunity of treating this case in the hospital.

STANLEY HOSPITAL, LIVERPOOL.

INTESTINAL OBSTRUCTION; BENEFICIAL ACTION OF THE EXTERNAL APPLICATION OF BELLADONNA.

(Under the care of Dr. COSTINE.)

FOR the following notes we are indebted to Mr. Charles Morton, house-surgeon:—

A man, aged thirty-five, was admitted on December 28th, 1882, suffering from obstinate constipation. The bowels had not been opened for fourteen days, with the exception of a little scybala passed after enemata occasionally. Until a fortnight ago the bowels had always been open regularly. The insuperable constipation had not been accompanied at its commencement by any acute symptoms, nor had blood ever been passed per anus. There was no history of his ever having had hepatic colic. There had been loss of flesh of late. For a fortnight he had vomited occasionally; had had much pain in his abdomen. The belly was much distended, but the walls were not tense. At times there was a soft, defined swelling in the right iliac region about the size of the cæcum. No lumps or bowel could be felt; there was no hernia. Nothing abnormal could be felt per rectum; a large quantity of fluid could be injected. He had taken all kinds of purgatives before admission, without any action of the bowels being produced by them. Ordered one grain of opium every six hours; also cold, strong beef-tea and milk in small quantities often. Next day he was free from vomiting and pain in the abdomen; bowels not open. On the 31st there was great prostration; the pulse was intermittent, frequent, and there was fæcal vomiting; indeed, death seemed fast approaching. Ordered plenty of strong beef-tea and six ounces of brandy in twenty-four hours, and one ounce of belladonna ointment spread on a large poultice to be applied over the abdomen, and repeated frequently. Great emaciation had taken place in the last few days.

On Jan. 1st he had a large liquid evacuation. There was no pain in the abdomen, though the fæcal vomiting continued. He seemed a little less collapsed. On the following day the bowels were still freely open, and there was no vomiting.

From this time he continued to improve; but on the 5th and 6th the bowels were not opened, and there was a return of rather severe abdominal pain. Castor oil failed to open the bowels; but the constipation and pain were removed by return to the old treatment of the external application of belladonna and the internal administration of small doses of opium. He left the hospital on Jan. 10th.

Remarks by Dr. COSTINE—It is often very difficult to say in any case whether recovery be due to any special method of treatment; and perhaps in this case the obstruction might have been overcome without the belladonna, but for fourteen days the bowels were unable to empty themselves downwards, the patient was evidently dying, and the only alteration in treatment other than the application of the belladonna was to give brandy, so that I think the strong probability is that the belladonna saved his life. The belladonna was first applied during the afternoon, and the bowels were opened the same evening.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

President's Address.—Poisoning by Citrate of Caffeine.—Diffusion of Medicinal Agents in the Atmosphere.

AT the meeting on the 12th inst., the chair was taken by the newly elected president, Sir JOSEPH FAYRER, who gave a brief opening address. After thanking the Fellows for the honour conferred upon him, and referring to the variety and value of the work done by the Society, and the satisfactory condition in which it was at present, he alluded to the new extension of the buildings, the accomplishment of which had been aided by the liberal manner in which a former President, whose munificence has made his name familiar as a household word, had come forward to their help, and he trusted that restored health would one day permit them to meet Sir Erasmus Wilson in the rooms which owe so much to his liberality. Sir Joseph then spoke of the catholic aims of the Society, and of the work done in the past year, paying a warm tribute to the Lettsomian Lecturer, Dr. Sansom. Among the subjects especially demanding attention was that of the causal relations of minute organisms to disease, of which they had already had contributions from Drs. Whipham and Heneage Gibbes as regards tuberculosis, about which much still remains to be determined. The probability that many other diseases depend on micro-organisms adds greatly to the necessity for continued observation and the true interpretation of observed facts. The subject of antiseptic surgery and its relation to the germ theory still afforded field for inquiry. The subjects of parasitic diseases, of the etiology of fevers, of tropical diseases, the value of alcohol, the histogenesis of cancer, were indicated as matters which were still open questions for debate, and the address concluded with an exhortation to the Fellows to contribute by their communications to the scientific and practical advancement of medical knowledge.

Dr. ROUTH read notes of a case of Poisoning by Citrate of Caffeine. The drug had been prescribed in drachm doses three times a day for the relief of severe headache in a man under treatment for debility. Bishop's effervescent preparation was intended, but the pure drug was sent. Fifty minutes after taking one powder he complained of burning sensation in the throat, of giddiness; there was vomiting and purging

with pain in the belly. He then became almost paralysed, and was affected with tremors, but his intellect was clear. Dr. Routh found him an hour later collapsed; pulse about 120. Ipecacuanha was given as an emetic, but failing to act, some animal charcoal, with nitrite of amyl and ether, was given. Vomiting subsequently took place, and ammonia, alcohol, and nitro-glycerine were given. For some hours he remained much depressed, and did not rally completely till 1.30 A.M. next day, or nine hours after taking the caffeine. Nitro-glycerine in one-minim doses was given every two hours, with digitalis, and in about three days he recovered to his former state.—The PRESIDENT did not know of any similar case in man. Experiments had shown that the citrate of caffeine stimulated involuntary muscles. In rodents it was only slowly fatal. It resembled theine and the alkaloid of coca and Paraguay tea in increasing the power of muscular effort.—Dr. THOROWGOOD had found the drug useful in cases of asthma. In a severe case he treated two years ago a threatened attack of asthma passed off after one dose (one grain) of the citrate of caffeine had been taken, but extreme faintness speedily set in. Later Dr. Thorowgood found that the attacks were due to cardiac disease, and the patient died eventually in syncope, so that the former syncopal attack was probably not due to the caffeine. He had seen no evidence of the alleged tetanising effects on the heart of this alkaloid.—Dr. GILBART SMITH would have preferred a less depressing emetic than ipecacuanha in such a case. He had given citrate of caffeine in cases of cardiac and renal disease, and in asthma, for which it was very useful. Caution was necessary in cardiac cases, for he had known severe collapse follow even small doses.—The PRESIDENT alluded to the value of strong coffee in opium poisoning, and the superiority of coffee to alcohol as a stimulant. Was caffeine, which is closely allied to quinine in having very little carbon, concerned in this action of coffee? Did Dr. Routh observe whether the paralysis passed into a tetanic condition as seen in animals?—Dr. ROUTH was aware of the experiments referred to and others in which theine was used. There were no convulsions, but only marked muscular tremors; and there was paralysis, but no tetanus. He feared to give sulphate of zinc or copper.

Dr. R. LEE read a paper on the Diffusion of Medicinal Agents in the Atmosphere. He remarked that the principles on which antiseptic surgery was founded might be extended to the treatment of pulmonary diseases, provided that the difference between diffusion in a vapour and a fluid was kept in view. In the volatilisation of any antiseptic or medicinal agent it is necessary that the water with which it is mixed should be evaporated, and that no practical use resulted from simply mixing the substance with hot water and inhaling the steam. Dr. Lee stated that the rate of volatilisation of any substance when boiled with water depends on its own boiling-point, its specific gravity, and readiness to mix with water. In the case of the oil of the eucalyptus globulus, by mixing alcohol with it the rate of evaporation could be controlled, for though its boiling-point was 320°, its specific gravity was less than water, and it volatilised when mixed with it much more rapidly than the water. Carbolic acid has the singular property of volatilising in exactly the same proportion as the water with which it is mixed, and thus it is the most suitable for all antiseptic methods of treatment.—Dr. CULLIMORE spoke of the value of sending patients to places where the air is naturally charged with certain emanations. In Iceland freedom from phthisis might be due to the sulphur in the air.—Dr. DAWTREY DREWITT asked Dr. Lee if he was quite sure that acetic acid is not volatilised when mixed with boiling water.—The PRESIDENT pointed to the fact that the air of London was permeated by sulphurous acid.—Dr. LEE, in reply, pointed out that burning was not volatilisation, but destruction.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

THE usual monthly meeting of the above Society was held on February 2nd, the chair being taken by Dr. Hart Vinen, the President of the Society.

Dr. HOOD read a paper on Dyspepsia. He maintained that the more our experience of the natural history of disease increases the more we must accustom ourselves to the fact that dyspepsia should be looked upon as symptomatic rather than generic. He drew especial attention to those cases of stomach lesion in which dyspepsia plays such an important part as a symptom, and suggested that in many cases of so-called simple dyspepsia there was a definite lesion of stomach coat. He held that the carefully compiled category of symptoms incidental to ulceration of the stomach suggests that its diagnosis is easy, the very opposite of that being clinically the case. Statistics proved that ulceration of the stomach was of very frequent occurrence, but beyond question the symptoms of ulceration varied very greatly. Although hæmorrhage was a symptom of the utmost moment, it was not judicious to wait for the presence of blood before inferring the existence of ulceration. All writers on the stomach treated ulcer as a chronic disease, but none of them advised such treatment as would be adopted in regard to an ulcer occurring on the surface of the body. In treating assumed ulcer he thought it imperative that the patient be kept in a recumbent posture in order that the stomach walls might be in a state of rest. Where there was much enlargement of the stomach, he generally used a counter-irritant, and he freely prescribed the various preparations of opium in those cases where there was no doubt that the dyspepsia did not arise from hepatic engorgement, as he found that it not only stimulated the bowels, but also made the patient less intolerant of restraint. Such treatment in the early stages of dyspepsia was sure to result well. Where the presence of ulceration was well marked, such treatment should be resorted to as would be insisted on if the ulcer occurred on the surface of the body. He mentioned the case of a lady in whom this method of treatment was productive of the best results.—Dr. DANIEL said that three or four years ago he attended a gentleman who had contracted indigestion. He gave calomel and colocynth. But the symptoms increased, the patient became very emaciated, vomited largely, and at last was unable to keep food on his stomach. The blood could be traced in the vomit. Dr. Gull was called in, and inferred that there was ulceration. He continued to get weaker, and became at last a mere skeleton. Enemata of nutritive liquids were given, but eventually he died of exhaustion. There was no post-mortem.—Dr. SCHACHT suggested that, in addition to rest, he regarded an enema every other day as important. Constipation was an awkward symptom, and the enema by relieving the stomach allowed the opium to do its work.—Dr. CAMPBELL POPE said that he overcame constipation with bismuth in conjunction with belladonna.—Dr. ORTON said that he knew of a practitioner who had symptoms of ulceration for thirty-five years, and who at last collapsed from vomiting. The post-mortem revealed ulcers in all stages.—Dr. HOOD, in reply, suggested that marked dyspepsia required the most careful examination, for early diagnosis was very difficult. The ulcers were really boils of the stomach, resulting in choked glands. He was strongly of opinion that dyspepsia demanded rigorous treatment.

Mr. C. B. KEETLEY briefly mentioned a case of Refracture after bony union of a fractured patella had been obtained by bony union, and Dr. JAMES THOMPSON showed examples of the Beaufort artificial limbs, and explained their peculiarities and advantages.

NORWICH MEDICO-CHIRURGICAL SOCIETY.

AT the meeting on March 6th (Dr. E. G. Barnes, President, in the chair), Mr. WILLIAMS exhibited a specimen of Dislocation of the Fifth Cervical Vertebra, in which reduction was effected. The rarity of the injury and its possibility being denied by many eminent surgeons were dwelt upon. Reduction was effected by extension being made from the chin and occiput, while counter-extension was made from the shoulders; the reduction was accompanied by a distinct snap or click. Death occurred on the fifth day. At the post-mortem the fifth cervical vertebra was found dislocated without any fracture of either it or the sixth. Careful manipulation showed it was by no means a difficult matter to reduce the bone, but on cessation of extension the displacement again occurred. The position in which the head had been placed, after reduction, on a pillow level with the injured vertebra, was found to be essentially wrong, as it did not prevent the head and upper cervical vertebræ from being carried forwards, reproducing the dislocation.

Mr. KIDD related a case of Popliteal Aneurism treated with Esmarch's Bandage. The bandage was applied tightly from the toes to the lower end of the aneurism, then loosely over the joint, and again tightly as far as the middle of the thigh. The elastic band was then put on, and the bandage taken off. The treatment was continued for two hours, and

the sac appeared then to contain semi-solid clot. Signoroni's tourniquet was applied to the apex of Scarpa's triangle, and the band removed. A strong pulsation was then felt in the sac, owing to the tourniquet not being screwed up tight enough; this was immediately stopped. Gangrene of the foot subsequently took place, and Syme's amputation was performed. The flaps sloughed, and amputation below the knee was then done, the progress of the case from that time being satisfactory. Mr. Kidd considered the gangrene of the foot, which was of the dry kind, to be due not to the elastic bandage, but to embolism, a clot being probably washed out of the sac at the time the elastic bandage was removed from the thigh.

Mr. CADGE read notes of a case of Popliteal Aneurism, cured by ligature of the femoral after compression in various forms had failed. In the course of his remarks Mr. Cadge stated that practitioners apart from hospital practice would probably find the ligature the most useful and ready method of treatment if compression did not quickly cure the disease.

Mr. PRANGLEY read a paper on a form of Dyspepsia which he termed "Climacteric." It occurs in women between the ages of forty and fifty. The symptoms are those of great nervous depression, with pain on the top of the head, noises in the ears, hot flushes and chills, with curious sensations in the abdomen. The dyspeptic symptoms are those of præcordial distress, with palpitation, costive bowels, coated tongue, and foul breath. The treatment consists of the administration of bismuth, bicarbonate of potash, and ammonia, adding valerian if the nervous symptoms predominate, followed by quinine, strychnia, and the dilute nitro-hydrochloric acid.

ACADEMY OF MEDICINE IN IRELAND.

MEDICAL SECTION.

A MEETING was held on January 19th, Dr. William Moore, President of the College of Physicians, in the chair.

Living Specimens.

Mr. A. H. BENSON exhibited a case of Hard Chancre on the Upper Eyelid; and Dr. J. MAGEE FINNY, a peculiar case of Vesiculo-tubercular Disease of the Skin of eighteen years' standing.

Specimens exhibited by Card.

Dr. A. W. FOOT exhibited drawings of Facial Chromidrosis; Dr. H. KENNEDY, Urinary Calculus; Dr. C. I. NIXON, Aneurism of Arch of Aorta obliterating Arteria Innominata; Dr. H. C. TWEEDY, Heart showing Vegetations on the Mitral and Aortic Valves; and Dr. F. J. B. QUINLAN (1), Bacillus of Tubercle in Sputum, and (2), Bacillus of Tubercle in Lung Tissue.

Empyema, with Notes on Antiseptic Fluids and Drainage-tubes.

Dr. RICHARD A. HAYES first read a paper on a case of Empyema treated by the Radical Method, with notes on some antiseptic fluids employed. After some observations, pointing out especially the great danger of producing general anæsthesia in cases of intended operation on large fluid effusions in the thoracic cavities, he mentioned the particulars of the case. A man, aged twenty-two, was the subject of right empyema of eighteen months' standing, with severe hectic and wasting. On his admission to Steevens' Hospital, the pus was thrice removed by aspiration, and the cavity washed out with carbolic solution without effecting a cure. An intercostal incision was then made and a large cannula introduced, the pus draining away into pads of oakum placed over the opening and the cavity washed out daily with antiseptic solution by means of an elastic catheter. The case progressed favourably, with the exception of a few complicating circumstances, and the patient was ultimately discharged and went to the country, a sinus only remaining unhealed. During the treatment of the case the following washes were used:—1 per cent. oil of eucalyptus, 2 grains; 1 ounce, or less than ½ per cent., carbolic acid; 2 per cent. boracic acid; and 1 per cent. salicylic acid. A careful record of the morning and evening temperatures having been kept, the results obtained from the use of the different antiseptics were as follows:—Oil of eucalyptus (1 per cent.), morning temperature 98·8° F.; evening temperature 100·4°. Salicylic acid (1 per cent.), morning temperature 98·3°; evening temperature 99·5°. Boracic acid (2 per cent.), morning temperature 98·2°; evening temperature 99·4°. Carbolic acid (½ per cent.), morning temperature 97·8°; evening temperature 98·7°. The foregoing temperatures are averages, the periods of observation being carefully selected so as to be free from complicating influences which might affect the fever curve. During the entire of the later stages of the case, carbolic acid wash was used, and the temperatures were uniformly identical with the result of observations in the early stages. The results, therefore, show a marked advantage as regards the hectic obtained by the use of an exceedingly dilute solution of carbolic acid. That the carbolic acid had this distinct effect was proved by a trial irrigation of pure water, an even temperature of 100° following its use.

Dr. PURSER then described a case of Left Empyema. The patient was a ship's steward, aged thirty. The disease was at first latent; but after nine months he was admitted into hospital, when he was tapped, and subsequently a drainage-tube inserted. His condition continued satisfactory for some months, when severe fever supervened, at first of a hectic character, but soon becoming continuous. Death ensued about three weeks from the commencement of the febrile symptoms. The compressed lung was found to contain air, and to have maintained its vesicular structure unimpaired. The cavity of the left pleura was much diminished. There were three wedge-shaped embolic patches in the spleen, which were softened and purulent. There were no other evidences of pyæmia. Professor Purser directed attention to (1) the prolonged latency of the disease, and to the slight distress, notwithstanding the compression of the lung and the displacement of the heart, which beat in the right axilla; (2) the advantages and disadvantages of different kinds of drainage-tubes in facilitating discharge, and preventing putrefaction; (3) the aseptic fever in the sense of Volkmann and Genzmer, from which the patient suffered at intervals, as contrasted with the septic fever from which he died; and (4) the apparently slight injury done to the lung by the prolonged compression from the effusion.—Dr. BENNETT called attention to the risk of injecting the pleural cavity at an early stage, when fever and dyspnœa were present. He advocated a local anæsthetic and the use of the spray in the radical treatment of empyema.—Dr. FINNY corroborated Dr. Purser's statement as to the entire absence of fetidity of the discharge during the time the patient was under his care, as well as at the post-mortem examination. Three weeks before death, the initial period of the fever, much pain was complained of in the left hypochondrium, and marked the occurrence of the embolic infarctions of the spleen. Fetidity of the pus was not induced by the use of a simple rubber tube unprotected by any antiseptic; and it was a question for consideration if a period did not arise in the course of such cases when antiseptics might with safety be dispensed with.—Dr. C. NIXON advocated tapping in cases of empyema instead of at once employing the radical treatment. He detailed a case in which the latter operation was performed without the spray, and as the fluid next day became fetid he washed out the cavity with good results.—Dr. W. G. SMITH disputed Dr. Hayes' conclusions as to the advisability of washing out the pleura with antiseptics, basing his opinion on the ground that the periods of trial by Dr. Hayes were too short, and that fluctuations of temperature in cases of empyema were common.—Mr. EDWARD HAMILTON corroborated Dr. Hayes' view on the advantage of washing out the pleura with carbolic lotion.—Dr. HAYES, in reply, said he was fully cognisant of the danger of using injections, but that the object he had in view was to induce a healthy condition of the pus-secreting pleura, and that the lowering of the temperature in his case was directly due to the use of carbolic acid.—Dr. PURSER considered that the only circumstance which justified washing out the pleura was where the discharge was fetid and continued fetid for some time.

TESTIMONIAL. — On the occasion of Mr. S. H. Moore, late Assistant Medical Officer of the Highgate Infirmary, leaving that institution, he was presented with a handsome silver-mounted oak tankard from the female patients, as a slight mark of their gratitude to him for his unvarying kindness and attention. The officers of the infirmary also gave him a Gladstone dressing bag with silver fittings, and a case containing a beautiful silver-gilt cigarette and fuzee case, with their hearty good wishes for his prosperity in his new appointment as medical superintendent of the Chelsea Infirmary.

Reviews and Notices of Books.

Ovarian and Uterine Tumours. By T. SPENCER WELLS. London: J. and A. Churchill.

THE great experience which Mr. Wells has had in operating on the subjects of ovarian tumour—an experience larger than that of any other operator—must of itself render this volume of great value. The work is a new edition of the well-known work, "Diseases of the Ovaries." Ten years have passed since the publication of the latter, and the progress made during that period in our knowledge of the physiology, pathology, and surgery of uterine and ovarian tumours is far greater than that made during any other period of equal length; and in a work with the comprehensive title of the one before us, by an author of such wide experience, we should expect to find a full account of the progress referred to. We have stated that the work is a new edition of "Diseases of the Ovaries," and we shall point out the main points in which it differs from its predecessor. Speaking generally, the arrangement of the subjects has been considerably changed, and in many chapters the order of sequence of paragraphs has been altered. Other important alterations have been made—matter has been added and matter omitted, and the result of the experience of the author during the last ten years has been incorporated. The first chapter of the former edition, treating of the anatomy and physiology of the ovaries and their appendages, has been omitted, and its place is taken by a very brief introduction. The chapter on the pathology and classification of ovarian tumours remains almost unchanged. The only alteration in it is the addition of the conclusions arrived at by Doran and Harris with regard to the origin of ovarian cysts, together with a reference to Leopold's observations on the transplantation of embryonic tissues. With this exception no reference is made to any of the work done in this department since the publication of Dr. Wilson Fox's memoir in 1864. The works of Sinety, Rindfleisch, Waldeyer, and Malassez are entirely ignored; and we cannot help feeling surprised at such grave omissions, and at the meagre and incomplete character of the account of this important subject.

The chapter on Diagnosis and Differential Diagnosis remains much the same as in the previous edition, with the exception of the part which treats of the chemical and microscopical character of ovarian fluids. This has been rewritten, and some recent observations have been incorporated.

In Chapter V. the Rise and Progress of Ovariotomy are discussed. Here Mr. Wells gives a fuller account of his early experience than in the former edition, and traces the early progress of ovariotomy in England, the European countries, and America, and the origin of antiseptics. The time has not yet come to write the history of ovariotomy (though this chapter of the book will form a valuable contribution to the subject), for some of the actors in the early days of the operation are still living. Mr. Wells performed his first ovariotomy in 1858, eighteen years after Charles Clay had begun in Manchester, and nearly as many after Frederic Bird began in London. We do not think that justice has yet been done to these and other early operators, whose work alone rendered possible the great success of Mr. Wells.

In the chapters on the Preparation of the Patient for Ovariotomy, &c., the operation of Ovariotomy, Treatment of the Pedicle, &c., there are some new points, such as the use of pressure forceps for controlling hæmorrhage, the antiseptic method of operating and treatment of the pedicle, together with a short notice of the accidents which may happen during the operation, such as fainting, injuries to viscera, and leaving foreign bodies in the peritoneum. Fifty-two pages of the book are occupied by a table of 1000 cases operated upon by Mr. Wells. Mr. Wells, at the beginning of his career as an ovariotomist, wisely resolved to publish every case upon which he operated, for at that time the operation was not generally accepted by the profession as a legitimate undertaking; but that time has gone by, and with it the occasion for the literal performance of Mr. Wells's resolve. The operation has for years been one of the most successful of capital operations, and the publication of the table referred to can serve no useful purpose, for the information it contains is too slight to be of any great value.

In Chapter XV., under the title Recent Extensions of Ovariotomy, Battey's operation is discussed. Although this chapter contains some sound and valuable observations, yet in the seven pages of which it consists it is impossible to do justice to Battey's operation; indeed we cannot regard this chapter even as an attempt at a scientific discussion of the subject.

The chapter on Uterine Tumours consists of the remarks on the diagnosis of ovarian tumours from fibroid tumours of the uterus which appeared in the former edition, together with additional cases in which the operation for the removal of fibroid tumours of the uterus was undertaken.

The last chapter in the book is on Partial Amputation and on Complete Excision of the Uterus, and mainly consists of notes of a case (already published) in which Mr. Wells performed the Porro-Freund operation.

We must confess to a feeling of disappointment on coming to the end of this work—a work which appeared to promise so much about ovarian and uterine tumours—for we find in it very little about uterine tumours, and but an incomplete account of ovarian tumours, while there is a good deal concerning ovariotomy and the method of its performance. The work would have been more correctly entitled, "My Experience in Ovariotomy and other Operations." As the experience of a great ovariotomist we estimate the book highly, but we cannot regard it as a scientific treatise on ovarian and uterine tumours.

The Essentials of Bandaging. With Directions for Managing Fractures and Dislocations, for Administering Ether and Chloroform, and for Using other Surgical Apparatus; and containing a chapter on Surgical Landmarks. Illustrated by 136 Engravings on wood. By BERKELEY HILL, M.B., F.R.C.S., Surgeon to University College Hospital, &c. Fifth Edition. Revised and enlarged. London: Smith, Elder, and Co. 1883.

THIS excellent little work is so well appreciated by students, for whom it is especially intended, that we need do little more than notice the appearance of this new edition. Mr. Hill has made no alteration in the plan of the work, although he has made some useful additions, such as an account of Thomas's splints for the treatment of the disease of the hip and knee joints, and Carr's splint for Colles's fracture. We notice also a brief description of the mode of using the ophthalmoscope, from the pen of Professor Tweedy, and a similar account of laryngoscopy, by Dr. G. V. Poore. A few new engravings have been added. The index is very complete. We are surprised to find that Mr. Hill continues to give so prominent a place to the treatment of dislocation of the hip-joint by pulley extension, while the reduction by manipulation is dismissed in only a few words. The description of the former is enriched with several engravings, while that of the latter has not one apportioned to it. And yet any surgeon resorting to pulleys before a thorough trial of manipulation would be seriously to blame. We notice that in speaking of the use of Davy's lever Mr. Hill states that the rod is to be pressed against the ischium of the sound side as a fulcrum. Mr. Davy makes the anus his fulcrum, and we should think this to be by far the preferable plan.

THE LANCET.

LONDON: SATURDAY, MARCH 24, 1883.

NOTWITHSTANDING the somewhat vestry-like proceedings of the two Royal Colleges of England in recent months, ending in the most unpractical and ill-advised scheme which has ever been concocted, we venture to hope that, in the face of a Government Bill, these bodies will pause and reconsider their duty. These Colleges have in this matter a reputation to lose. They have been conspicuous for twelve years for their disinterestedness in urging legislation to compel the consolidation of licensing authorities in each division of the kingdom, and the leading members of these Colleges must very well know that no agreement for a Conjoint Scheme between themselves in England will remove the scandals of low examinations elsewhere. On the contrary, they must know that their present scheme will drive men, and give them justification for going, to cheaper and easier boards. The pressure of business in Parliament has of recent years been such as to excuse the argument: "Government will do nothing, therefore we must take some action." But all this is altered by the fact that the Government has introduced a Bill into Parliament, before the Easter recess, on the lines of the Report of a Royal Commission, signed, without qualification or dissent, by so trusted a member of the profession as Sir WILLIAM JENNER, the present worthily thrice-elected President of the College of Physicians, and by Dr. ROBERT M'DONNELL of Dublin. No man in the profession knows better what is due to a Government and to a Royal Commission than Sir WILLIAM JENNER; and if there is one thing that he respects more than either the Government or a Royal Commission, it is his profession. It is not conceivable that he will be a party to disappointing, not to say mocking, the Government, the Commission, and the Profession. There are timid, weakmen in all corporations who fear reform as they fear a breath of infection. These men have resisted the feelings of the profession for years, and rather than see in the Medical Council a few representatives of registered practitioners have wrecked two or three Government Bills. Sir WILLIAM JENNER has never been so afraid of his professional brethren; his regard for them, and his advocacy of their right to representation in the Medical Council, have been amply and constantly expressed. He is not likely to falter or fail now when a powerful Government accepts his suggestion, and gives representation to the profession. The College of Physicians has never had any sympathy with the rank and file of the profession. For years it would have nothing to do with them, and handed them over for examination to the Apothecaries' Society. It has come to its senses of late years, and may be expected still, notwithstanding its recent movements, not to estrange the profession by opposing, at a supreme moment, a Bill which will greatly tend to equalise minimum examinations in the three divisions of the kingdom, and to elevate all examinations for higher titles. And it will do all this without destroying the great corporations, which, it may be safely assumed, will still have charge of all but the Final examinations of candidates, and which, even in the Government Bill as it stands, will have a powerful voice in the Divisional Boards, which are to determine the character of the Final Examining Board. This voice is not a preponderating one. In England the Divisional Board is to include eight representatives of universities and seven of corporations. Considering how little universities do for medical education in England, we should be quite willing to see this proportion reversed. In Scotland, where the universities do so much for medical education, and the corporations do so much to keep it down, the number of university representatives on the Divisional Board is properly eight, against three for the corporations. In Ireland, the corporations will have seven votes on the Divisional Board, against four of the universities. It is not of the essence of the Bill to give seats to the Apothecaries' Society and the Faculty of Physicians and Surgeons of Glasgow. Several clauses of the Bill seem to contemplate the speedy extinction of these bodies as medical authorities, and it would very much facilitate matters to let them retire at once. If the great medical corporations are well respected in the proposals of the Government for the formation of Conjoint Boards, they are not overlooked in the proposed constitution of the Medical Council. Of course the cessation of the representation of individual bodies is a logical consequence of the cessation of the licensing authority of individual bodies. But in the six Crown members, and in the eight representatives of the three Divisional Boards, there will be ample security that the interests of the great medical and surgical corporations will be regarded.

We can see no reason, then, why either the corporations in England or the universities in Scotland or Ireland should oppose this Bill. It will leave almost untouched the granting of higher qualifications, only securing, and that indirectly, that they shall really imply higher knowledge than ordinary ones. This will be done by the clause which we publish to-day, in Part 4, which divides medical titles into two classes—(*a*) medical qualifying titles, and (*b*) medical higher titles. The latter, it will be seen, are only to be registered if it shall appear to the Council that they have been granted after examination in respect of a substantially higher degree of knowledge than is required to obtain a qualifying diploma, or if they imply a diploma which has been granted as a testimonial of special distinction, and which appears to the Medical Council to deserve recognition as a higher medical diploma. No medical authority which respects its own higher qualifications need fear the operation of this rule, and those who take higher medical titles have a right to expect the State-appointed medical authority to give its sanction to them. If there are any bogus titles in existence when this clause comes into force, so much the worse for the bodies that grant them, and so much the better for all men with substantial and respectable diplomas.

But whatever the action of the medical bodies and authorities in regard to this measure—and we know that reforms are never liked or favoured by the bodies needing reform—it is one worthy the support of the profession. A sentence in one of the clauses almost takes one's breath away, "*For the benefit of the profession*,"—we are so little used to anything being done "for the benefit of the profession." This applies

to the use to which surplus funds are to be devoted, of which there are now about £30,000. But the Bill not only thinks that moneys taken out of the pockets of the profession should be used for the benefit of the profession, but recognises the right of the profession to be represented on the Medical Council, it provides some security for fair and equal examinations, and it guards with additional security those titles which represent legal qualifications to practise medicine. A Bill which does all this ought to receive the cordial support of the profession, every member of which should ask his representative in Parliament to assist passing it into law.

THE subject of resection of the stomach has almost ceased to possess the interest of extreme novelty. The operation has been now performed a sufficient number of times to permit some general conclusions to be drawn from the combined experience of various surgeons. It is true that the operation is still in its infancy, but a comparison of the cases in which it has been performed, and of the results, may indicate some conclusions regarding the advisability of its performance. Some valuable facts bearing on the subject have been recently collected by Dr. TROQUART in the *Journal de Médecin de Bourdeaux*.

Pylorectomy or partial gastrectomy has now been performed in twenty-nine cases. The first question which demands attention is, For what diseases has the operation been employed? This may be readily answered. Twenty-seven times the procedure was resorted to for tumours, nearly always of a cancerous nature, and nearly always of that part of the stomach which is the most frequent seat of disease: the pyloric region. Twice the object of the surgeon was to excise a chronic ulcer. Of the cases of carcinoma, twenty-three succumbed at varying but short periods after the operation. None of the fatal cases lived longer than eight days; most proved fatal in a few hours from the direct effects of the surgical procedures. In one instance BILLROTH opened up the old wound on the sixth day, on account of symptoms of occlusion. What information do these facts afford regarding the justification of the operation? Four patients out of a total of twenty-seven, suffering from an avowedly incurable disease, recovered. If this statement were equivalent to saying that they were cured, the plea of justification would certainly have a strong *primâ facie* ground. But we must first inquire into the degree and extent of the "cure." In one case of so-called cure, a recurrence of disease occurred at the end of four months, in another the patient was in good health two months after the operation, but no further information is forthcoming of the remainder. On the other hand, it should be stated that the advocates of the operation maintain that the retrospect is so bad because the necessary interference was so much delayed; the patient's health was so deteriorated that success was almost impossible. It is worthy of remark that both cases of simple gastric ulcer received apparently permanent benefit. Certainly, however, we must recognise degrees of justification, and many physicians may be found to strenuously oppose the knife as a remedy for simple gastric ulcer. Yet it seems conceivable, not to say probable, that such benignant diseases may become so perilous as justly to lead to the question of operative interference. Some surgeons have gone so far as to advise the performance of abdominal section in perforation of the stomach, with a view to resect the diseased tissue, unite the cut edges, and wash out the peritoneum. The excision of the cicatrix has been propounded in instances of simple pyloric obstruction, the result of the action of some corrosive acid, but not, so far as we know, realised.

The operation is recorded as having been done but once in each of the years 1879 and 1880, fourteen times in 1881, and thirteen times in 1882. It is possible that these numbers are below the actual. There is no case of success on record above the age of sixty; the ages of the good results varied from twenty-eight to fifty-two. The surgical procedure presents many features of importance for consideration. Of all the difficulties to be surmounted, that of the management of adhesions to surrounding parts is the most considerable. RYDYGIER said that fifteen out of twenty-seven cases were the subjects of adhesions; and these numbers are certainly not exaggerated. The statistics of GUSSENBAUER and VON WINIWARTER, derived from 903 cases of cancer of the stomach observed and analysed at the Pathological Institute of Vienna, showed that there were 542 cancers of the pylorus, of which 370 had adhesions. Even in the small number of instances operated upon and published, the experience of adhesions has been very varied. Most frequently it is the pancreas that is bound to the diseased tissues, but the vena cava, portal vein, and transverse colon have all been found adherent. Danger is therefore entailed by the very procedure which is to free the diseased organ from these vital structures. The trouble arising from hæmorrhage is generally avoided by using a double ligature and cutting between, as in ordinary abdominal operations. But even such simple measures have been attended with misfortune; in one example of strong agglutinations the mesocolon was ligatured, and death ensued from the sloughing of the corresponding portion of the colon. As with secondary affection of the lymphatic glands elsewhere, so here, it is necessary to remove them if anything like success is to be expected. The length of time during which the patient is under the influence of chloroform and exposed to the general vicissitudes attending a prolonged operation, are all factors of supreme moment in the prognosis of the case. It is partly under these circumstances that adhesions are so grave and momentous. But the obstacles to be overcome are not yet completely related. There are the impediments which beset the surgeon in suturing the cut edges of the stomach and duodenum together. It need not be said that the serous coats are placed back to back, and that the suture should not penetrate to the mucous layer. It frequently happens that the wound of the stomach is of larger circumference than that of the duodenum. This has been surmounted in various fashions: the borders of the incision in the stomach may first be united for some distance until it is judged that what remains can be accurately adapted to the cut edge of the duodenum. Sometimes a fold of the gastric wall has been made; in others a triangular lamina has been excised from the greater gastric curvature. If the junction of the two parts is not nicely effected, diverticula may be left wherein food may stagnate. It was to avoid this that BILLROTH abandoned the stitching of the duodenum to the lesser curvature of the stomach. An artifice has been devised in the oblique section of the duo

denum, which thus presents a greater circumference for union with the stomach, and, moreover, furnishes a sort of lappet which much facilitates the proper adaptation of part to part. BILLROTH, in the last of his four operations, first sewed together a portion of the resected edges before completing the excision of the diseased stomach and duodenum. It is obvious that in such matters personal cunning and handicraft go a long way. The sutures used have been either catgut or carbolised silk. The number of stitches employed has been quite remarkable; fifty is a common number, and more than one hundred have been inserted. Alimentation has been conducted per rectum for at least twenty-four hours; a little milk or beef-tea has been allowed per os from the second day, and in instances of recovery solid food has been eaten on the eighth day. The incision through the abdominal wall has been made by different surgeons in three ways: (1) parallel to the right costal margin, (2) transversely, and (3) vertically in or near the linea alba. The majority of surgeons elect the last form of incision, but BILLROTH adheres to the transverse cut.

A QUESTION is being discussed by the various authorities comprised within the Edmonton Union which well illustrates a misunderstanding which prevails in many parts of the country as to the respective duties of sanitary and Poor-law authorities in dealing with infectious disease. The guardians of the Edmonton Union have hitherto been in the habit of receiving into the workhouse poor and destitute persons suffering from infectious disease, and, as in many similar instances where the workhouse affords the only available means of isolation, the question of the patient's actual destitution has not been very rigidly inquired into. This course has, however, been attended with distinct danger to the other inmates, and frequently when small-pox cases have been admitted into the infectious building the disease has spread to other parts of the workhouse.

The guardians, having regard to these circumstances and to the fact that the duty of providing means of isolation is not imposed on them, have communicated with the several sanitary authorities within the union, informing them that for the future, whenever a pauper or destitute person is reported to them as suffering from infectious disease, they will provide him with all the requisite relief which his case may require, and that they will report the case to the sanitary authority of the district in which he is placed, so that any sanitary measures which are deemed necessary may be adopted. In short, they have come to recognise that they as a Poor-law authority have only to do with the welfare of the individual pauper, and that if any measures, such as isolation, are required in the interests of the public health, it is for the sanitary authority, and not the Poor-law authority, to adopt those measures.

The letter in which this decision has been conveyed to the several sanitary authorities has evidently caused some astonishment, and it is difficult for some members of the several local boards of health to see that the prevention of the spread of disease is a duty which the Legislature has distinctly imposed on them, and not on the guardians of the poor. The clerk to the Enfield Board of Health has drawn up an able statement pointing out what is the law on the subject, but it is not difficult to see that he with others feel aggrieved that the guardians are no longer willing to perform duties which have hitherto relieved the sanitary authorities from all concern as regards the more pressing cases calling for isolation. Then, in recommending his authority as to the several courses which are open to them, he suggests as an alternative that matters should be allowed to take their course, "leaving it to the guardians to provide as hitherto for the wants of the pauper sick, and in their own defence to provide such means of isolation as will minimise the number of patients requiring relief and medical treatment at the cost of the ratepayers throughout the union." Such advice is unquestionably vicious in principle, and it is opposed to all that is contained in the official report on the subject, which the writer so freely quotes. Indeed, it cannot be too soon made plain that if the isolation of the infectious sick is to succeed, it must be effected in such a way and by such means as shall secure its being in no way confounded with Poor-law relief. According to the plan advocated some paupers might, it is true, be isolated by the guardians, but other cases of infectious disease, which would constitute a far greater source of danger to the sanitary districts—namely, such cases as occur at milk-vendors', bakers', tailors', and drapers' establishments—would certainly not come within the range of the Poor-law officer's duties, and these would therefore remain to spread infection broadcast. So, also, the guardians would have performed the whole of their duty if, having provided the individual pauper with such nursing, medical attendance, and relief as he stands in need of, they left the whole question of the spread of infection to take care of itself. If, however, the sanitary authorities of the union performed the duties which belong to them and provided a proper hospital for the isolation of cases of infectious diseases, they would be able not only to receive patients irrespective of their social status, but also so to arrange their buildings that they could, by means of a classification of patients, prevent any such admixture of the respectable classes with the lower grade of paupers as would tend to impair the usefulness of their institution. In short, the duty of protecting the public health by the provision of means of isolation irrespective of social standing has been wisely cast upon sanitary authorities by the Public Health Act, 1875, and their powers in this matter are so wide that they can without difficulty effectually deal with the whole subject. On the other hand, the guardians could, under any circumstances, only deal legally with the genuine pauper, and even in their dealings with him they are in no way bound to have regard to the spread of infection to the public generally. Our advice to the sanitary authorities comprised within the Edmonton Union is fairly to face their duty in this respect, and either separately, or by means of suitable combinations amongst themselves, to make such provision for the isolation of infectious disease amongst all classes as will properly meet the requirements of their several districts.

AMONGST the most difficult problems in physiology are those connected with the exchange of material of the body. These problems constitute the real business of physiological chemistry. To the correct knowledge of the successive chemical changes which happen anywhere in the body all physiological chemistry is subservient. Physiologists have

made shrewd guesses and well-timed conjectures, but the antecedents of the most important of all nitrogenous excreta are still imperfectly known. Quite recently some new researches bearing on the subject have been made. M. DAPIER has conducted clinical and experimental investigations on the variations of urea in the urine under different conditions. His conclusions are quite in accord with the teachings most prevalent in this country. He finds that in the normal state the quantity of urea excreted is directly proportional to the activity of the general nutrition; that increase of nitrogenous food augments the quantity of urea, but the maximum is not reached till between five and seven hours after the increased ingestion. Muscular exercise only acts in an indirect manner by increasing the activity of the vital processes. Hydrocarbons, fats, and alcohol retard the production of urea on account of their easy oxidation. The state of fever heightens the excretion of urea, if the liver and kidneys be sound. Renal disease prevents the proper secretion of urea. Any state of hyperæmia of the liver, whether due to local irritation or to irritation from septic material absorbed from any part of the domain of the portal vein, may cause hypersecretion of urea. On the contrary, all affections of the liver which diminish the hepatic circulation correspondingly cut off the production of urea. In 1876 BROUARDEL clearly pointed out the fact of diminution of the quantity of urea secreted in many diseases which destroyed hepatic tissue, and this was insisted upon by MURCHISON in his Croonian Lectures. DEBOVE, whilst admitting the soundness of the facts ascertained by BROUARDEL, contests the explanation, which was that the liver actually made less urea. A smart distinction is drawn by DEBOVE between the urea in the urine and that in the blood; if the latter be diminished there must be a diminished formation, if it be increased we must imagine that there is some disturbance in the renal function. DEBOVE found that in a number of hepatic diseases the urea in the urine was lessened, whilst the urea in the blood was increased. This state was brought about, according to him, by an impairment of excretion by the kidneys, which is explained on the hypothesis that biliary matters circulating in the renal vessels damage the renal functions. To the objections that the urea in the blood ought to be augmented to a greater degree than was found, and that jaundice is by no means an invariable accompaniment of hepatic disease, DEBOVE replies respectively that the presence of an increase of urea in the blood may tend to delay those metamorphoses of tissue which produce urea, and that there are other constituents besides pigment in the biliary matters which may damage the renal tissue. The alteration of the blood postulated by FRERICHS, VULPIAN, and others as characterising malignant jaundice is believed by DEBOVE to exist, though in a less degree, in cases of simple icterus. We may mention that in a case of jaundice due to gall-stones, examined by DEBOVE, a considerable diminution of urea in the urine was detected, whilst that in the blood was increased. If the urea present in the blood be taken as an index to the presence of other products of nitrogenous metabolism, then we may understand with DEBOVE that a uræmia of hepatic origin may occur. But the pathology of uræmia is not yet settled. And the view that acute yellow atrophy causes its symptoms by the non-conversion of such half-metabolised bodies as leucin and tyrosin into urea is one with which we are familiar. Moreover, according to DEBOVE, it is the kidneys which are in fault in the blood deterioration, and it may seem, therefore, an abuse, or at all events a remote use of terms, to speak of a uræmia of hepatic origin, if we adopt his views. Again, the estimation of urea in a complex fluid like blood must be a matter of difficulty; and if urea be ready formed in the blood, the excretion by the kidneys in any other sense than that of a filtration would seem to imply a waste of energy. Filtration depends chiefly on blood-pressure, and from DEBOVE'S remarks we gather that the "biliary matters" are only supposed to deteriorate the renal secreting tissue; hence we may fairly be sceptical in regard to the conclusions of the latest writer in this department of physiology. No doubt the subject is one of extreme difficulty, and any positive statements must be considered to be premature, or at all events open to contradiction.

Annotations.

"Ne quid nimis."

ROYAL COLLEGE OF PHYSICIANS.

AN extraordinary meeting of the Fellows of the Royal College of Physicians was held on Monday last, the 19th instant, at 5 P.M., and was largely attended. The chief business was to elect a President, and Sir William Jenner, Bart., was almost unanimously re-elected. Before the ballot for a president for the next year, Sir William Jenner gave a concise account of the most important circumstances that had affected the College, and, in accordance with the usual custom, referred to the lives of the Fellows who had died during the past year. The deaths of Dr. Peacock, Sir James Alderson, and Sir Thomas Watson gave more than usual melancholy interest to the occasion, and the eloquent language in which their works and characters were described was responded to by the Fellows with every mark of deep sympathy. A committee was appointed to watch the progress of the Government Medical Bill, and to report thereon occasionally to the College. It was also determined to adopt the recommendation of the Council that the election of Fellows be conducted as heretofore, and after some routine business had been transacted the meeting adjourned.

MEDICAL PROFESSORSHIPS AT CAMBRIDGE.

WE are glad to see that, in accordance with their statute, the Council of the Senate of the University of Cambridge announces that there are funds arising from the common university fund from which the endowment of a Professorship of Physiology may be met, and recommends that immediate steps for the appointment of such a professor be taken. There is, we need hardly say, only one possible occupant of this chair at the present time, and fortunate is the university in already possessing a physiologist so accomplished and so able to adorn the new professorship as Dr. M. Foster. The Board of Medical Studies has urged the appointment of a Professor of Surgery as an immediate necessity. Unfortunately there is no endowment forthcoming for this chair, but Professor Humphry, who has already done so much to establish a medical school in connexion with the University of Cambridge, has generously volunteered to accept the professorship without stipend, at the same time resigning his chair of anatomy. We congratulate Dr. Humphry on his being the first Professor of Surgery at Cambridge, but we cannot help regretting that the appointment necessitates the severance

of his connexion with the anatomical department. He has been a most successful teacher of anatomy, has exerted a wide and great influence over his class at a time when its members were commencing their scientific studies, and his place will not be an easy one to fill.

PROTECTIVE INOCULATION—KOCH AND PASTEUR.

THE controversy which has arisen between the two foremost investigators into the intimate nature of contagion—the veteran chemist of Paris, and the younger pathologist of Berlin—is one of which we are only just seeing the commencement. The issues are so important, that it is to be desired that renewed investigation will be undertaken by unprejudiced observers, in the hope that the truth may be revealed. There can be no denying that Dr. Koch has hit the weak points of M. Pasteur's case, and his analysis is all the more vulnerable from the severe and critical manner in which he has dealt with the subject—a style which differs very widely from that of his opponent—a difference partly, no doubt, explained by the admitted diversity in modes of thought, work, and expression between the Gaul and the Teuton. Those who have perused the summary of Dr. Koch's reply, that we have just published, will note how little agreement there is between himself and M. Pasteur, not only upon the subject of anthrax, but upon those other infectious diseases which have been experimentally studied by the latter. Thus Koch thinks it indubitably proved that the supposed virus of rabies which Pasteur discovered is identical with that of the septicæmia of rabbits; and he says the same of equine typhoid too, thereby implying that M. Pasteur is ignorant of the characteristic microbe of septicæmia in rabbits, or that he has been very careless in safeguarding his observations. Indeed, Koch's strongest attack is directed against the method followed by Pasteur in his assumption of a specific micro-organism in the saliva of a hydrophobic child, or in the nasal mucus of a horse suffering from typhoid fever, without taking the precaution to isolate the organism and cultivate it before making his inoculations—the method which Koch claims to be the only safe one for determining the question. It is in anthrax that the most important issues are involved, for it is only in this disease that the practical application of Pasteur's doctrines has been made—viz., that immunity from this scourge can be attained by vaccinating (or rather inoculating) sheep and oxen with the attenuated virus. Koch admits the fact of attenuation, and it may be remarked, agrees with Pasteur and differs from Dr. Klein, in believing that this is due to some change effected in the pathogenic bacilli themselves; but he does not admit that this change is due to the oxygen of the atmosphere, as M. Pasteur thinks, and by a series of carefully conducted experiments he shows how the virus loses its power in cultivation more or less rapidly according to the temperature to which it is submitted. There are graver differences than this, however, which may be summed up in a very few words. The method of vaccination is alleged by Koch to be imperfect. Although an animal previously inoculated with a highly attenuated virus is able to resist the effect of a second and more powerful vaccination, yet this is not a universal rule, and a certain proportion of the vaccinated animals—a number which Koch places much higher than Pasteur—die from the effects of the secondary vaccination itself. After passing through so severe an ordeal, the survivors should be sufficiently protected, if any real practical value is to accrue from the method. But Koch shows that, although they may resist further inoculations, such animals may still fall victims to spontaneous anthrax. If this be true, where is the protection? and what reliance is to be placed upon the "vaccinations" and "revaccinations" to which so many thousand head of cattle in France and elsewhere have been subjected? Coming from one whose researches upon this and other infectious diseases have received general approbation for the exactitude and care with which they are conducted, such criticisms as are here offered upon Pasteur's labours must receive attention; for it must never be forgotten that, wide apparently as is the principle upon which Pasteur has based his advocacy for "vaccinations," applicable as it may seem to be to many human diseases, it has yet to be conclusively proved, even in the case of anthrax, where the conditions and nature of the virus have been so thoroughly worked out.

"THE DISLIKE OF DOCTORS."

LADY FLORENCE DIXIE assigns as a reason for her refusal to send for a medical man to see her after the recent attack made upon her, "I dislike doctors!" It would have been, in many ways, wise to call in the assistance of a trusted practitioner after such injuries as her ladyship is alleged to have received. We are not, however, interested in that matter so much as in the fact that there *is* such a feeling as "dislike of doctors." In part, doubtless, this feeling may arise from the recognition that "doctors" stand very much in the same relation to the body and mind as the minister of religion occupies towards the conscience. A medical man lifts up the veil and sees the psycho-physical being behind it. Probably in a certain proportion of instances the sense of being known is not pleasant. The feeling that a fellow-mortal possesses a deep insight into the actual condition of the organism, and is able to form a clear and approximately full and accurate estimate of the character, may, in some instances, be disquieting, while in others it engenders that sort of self-consciousness on the part of the patient which is experienced by devout penitents in the presence of their confessors, a feeling of mingled trust and anxiety, of satisfaction and regret. We cannot believe that any other form of "dislike of doctors" than that many-phased feeling to which we have alluded can prevail. The medical adviser is, or ought to be, the best known and the most sincerely trusted of all the friends of his patient. His friendship should be even more thoroughly a sentiment of the inner life than any other. It is in this light the lay public should view their family doctors, and in this esteem the practitioner should aim to be held.

LIVERPOOL ROYAL INFIRMARY.

WE referred a short time ago to the proposal of the Committee of the Liverpool Royal Infirmary that the City Council should give a plot of ground adjoining that on which the present building stands and so allow of the erection of the new infirmary on the present site. We gave what we believe to be sound reasons why this course should be adopted. Naturally some persons question the propriety of such an expenditure of public property, and, while not lacking in sympathy with the object in this case, oppose the creation of a precedent which may be brought forward in support of some less generally approved expenditure. Mr. Mitchell Banks has written an able letter to the *Liverpool Daily Post*, in which he repeats and amplifies the arguments in favour of the Committee's proposal. He shows that the infirmary is in every way conveniently situated, quite in the centre of the busy people who form the bulk of its patients, near the Medical School, Nursing Institution, and the residences of the Staff. The only objection that can be urged against it is that it is adjoining "horrible abattoirs, pig-markets, blood factories, gut-cleaning establishments, and hide and tallow depôts."

By the proposed new scheme, however, some of the most objectionable of these neighbours would be displaced and this objection overcome. To banish the infirmary to an outskirt would lessen its utility to the class for whose good it is specially maintained, and greatly increase the labour of those who give their valuable professional services, and we trust that the City Council will accede to a request reasonable in itself, not dictated by any selfish desire, but inspired by a wish to make the new infirmary meet the wants of the labouring population of Liverpool as efficiently as possible.

MEDICAL CHARGES VINDICATED.

THE following suggestive report is from the columns of *Kelles' Margate and Ramsgate Gazette*:—"Harding *v.* Major Unwin; a claim for £6 15*s.* for medical attendance upon the defendant's daughter at the order of a lady who kept the school where the girl was. The defendant pleaded that the attendances were excessive and the charges exorbitant; but his Honour regarded them on the other hand as fair, reasonable, and the attendances as necessary. He gave judgment for the amount claimed, adding that he had found that the medical profession was not only the most just but the most generous of all professions.—The defendant said he resisted the claim upon public grounds, as it did not matter to him whether he paid £4 or £6." Major Unwin is to be congratulated on having driven his medical man to seek redress in a county court. The Major is likely henceforth to have more worthy views of the gravity of disease and of the value of medical services. We are informed that the disease was measles followed by acute otorrhœa, and that Mr. Harding, of Westgate, charged the Major at the rate of three visits for a guinea while his daughter was at Westgate, and two for a guinea when she removed a mile and a half off, to Margate. We commend Mr. Harding's course to others similarly situated.

THE AIM OF EXERCISE.

IT should be understood by the public, as it is known to the profession, that the aim of exercise is not solely to *work* the organism which is thrown into activity, though that is one, and a very important, part of the object in view, because as the living body works it feeds, and as it feeds it is replenished; but there is another purpose in exercise, and that is to call into action and stimulate the *faculty of recuperation*. Those who believe in the existence of a special system, or series, of trophic nerves, will not object to this designation of the recuperative function as a separate "faculty," and those who believe nutrition to be effected in and by the ordinary innervation will recognise the sense in which we employ the term in italics. It is through defect or deficiency in the vigour of this faculty, unaccustomed feats of strength, whether of mind or muscle, are found to be exhausting. The task is performed, but the underlying faculty of restorative energy, or power of recuperative nutrition, located in the particular part exceptionally exercised, is not in a condition to respond to the unusual call made upon it. When a man goes into training, or, which is practically the same thing, when he habituates himself to the performance of a special class of work he so develops this recuperative power or function that the repair or replenishing necessary to restore the integrity, and replace the strength of the tissue "used up" in the exercise, is instantly performed. The difference between being accustomed to exercise and able to work "without feeling it," and being barely able to accomplish a special task, and having it "taken out" of one by the exploit, whether mental or physical, is the difference between possessing the power of rapid repair by nutrition, and not having that power in working order—so that some time must elapse before recovery takes place, and during the interval there will be "fatigue" and more or less exhaustion. The practical value of a recognition of this commonplace fact in physiology will be found in the guidance it affords as to the best and most direct way of developing the power or faculty of recuperation by exercise. Many persons make the mistake of doing too much. Exercise with a view to recuperation should never so much exceed the capacity of the recuperative faculty as to prostrate the nervous energy. The work done ought not to produce any great sense of fatigue. If "exhaustion" be experienced, the exercise has been excessive in amount. The best plan to pursue is to begin with a very moderate amount of work, continued during a brief period, and to make the length of the interval between the cessation of exercise and the recovery of a feeling of "freshness" the guide as to the increase of exercise. We do not mean that false sense of revival which is sometimes derived from the recourse to stimulants, but genuine recovery after a brief period of rest and the use of plain nutritious food. If this very simple rule were carried into practice by those who desire "to grow strong," there would be less disappointment, and a generally better result, than often attends the endeavour to profit by exercise unintelligently employed.

BRISTOL GENERAL HOSPITAL.

FROM a report of the half-yearly general board meeting of the Bristol General Hospital, held last week, we learn that this institution, which has been closed sinced September 5th of last year, chiefly in order to construct a new and perfect system of drains, and to replace the old, comfortless, concrete floors with the modern impermeable wooden ones, is now almost ready for the reception of patients. The out-patient department is already open. The improvements are expected to cost about £8000, which entails a loss of £400 per annum. The Mayor, who presided at the meeting, made an appeal for funds, which we hope will be successful, and he spoke very wisely on the absolute necessity of having our hospitals and all their appliances as perfect as our knowledge and experience can make them. In such a rich city as Bristol there should be no lack of support for an institution doing so much good as the General Hospital. One very satisfactory item in the financial statement is the receipt last year of nearly £800 in the form of workmen's subscriptions. This fact is an eloquent appeal, from those who look to the hospital for aid, to their richer fellows to support it liberally, and just now, when the committee has taken a bold course in order to make the hospital in every way as suitable for its purpose as possible, there is special fitness in their being warmly supported by the discriminating and generous public.

CURIOUS PARASITE.

AT the last meeting of the Linnean Society Dr. Cobbold described a worm which he called Simondsia paradoxa. It is a nematode, the male living free in the stomach of the hog, whilst the female is lodged in cysts within the walls of the stomach. Although discovered thirty years ago by Professor Simonds, the worm has never been properly examined. The strange thing is that the female carries outside its body a large rosette-shaped organ. This the author of the paper considers to be the uterus, and compares it to the generative apparatus of Spharularia bombi. If Schneider's view be correct the prolapsed uterus of the nematoid of the humble bee is nearly thirty thousand times larger than the maternal worm. The latter is a mere appendage, and was regarded by Sir John Lubbock as the male. Dr. Cobbold thinks that the branched rosette of Simondsia is homologous with the overgrown prolapsed uterus of Spharularia bombi.

FILARIA DISEASE.

THE rapid strides which our knowledge has made during the past few years in the subject of the filaria parasite have been mainly owing to the diligent researches of Dr. Patrick Manson, who continues to work at the question. In the last number of the Medical Reports for China Dr. Manson deals with the phenomenon known as "filarial periodicity," and with the fate of embryo parasites not removed from the blood. The intimate pathology of the disease, and the subject of abscess caused by the death of the parent filaria, also receive further attention. An endeavour to explain the phenomenon of "filarial periodicity" by an appeal to the logical "method of concomitant variations" takes Manson into an interesting excursion which is not productive of any positive results; nor is any more certain conclusion come to with regard to the fate of the embryos which disappear from the blood during the day-time. Manson does not incline to the view that there is a diurnal intermittent reproduction of embryos with a corresponding destruction. An original and important speculation is made with respect to the intimate pathology of elephantiasis, chyluria, and lymph scrotum, which is thoroughly worthy of consideration. Our readers are probably aware that the parent filaria and the filaria sanguinis hominis may exist in the human body without entailing any apparent disturbance. The diameter of an embryo filaria is about the same as that of a red blood-disc, $\frac{1}{300}$ of an inch. The dimensions of an ovum are $\frac{1}{70}$ by $\frac{1}{300}$ of an inch. If we imagine the parent filaria located in a distal lymphatic vessel to abort and give birth to ova instead of embryos, it may be understood that the ova might be unable to pass such narrow passages as the embryo could, and this is really the hypothesis which Manson has put forward on the strength of observations made on two cases. The true pathology of the elephantoid diseases may thus be briefly summarised: A parent filaria in a distal lymphatic prematurely expels her ova; these act as emboli to the nearest lymphatic glands, whence ensue stasis of lymph, regurgitation of lymph, and partial compensation by anastomoses of lymphatic vessels; this brings about hypertrophy of tissues, and may go on to lymphorrhœa or chyluria, according to the site of the obstructed lymphatics. It may be objected that too much is assumed in supposing that the parent worm is liable to miscarry. But as Manson had sufficient evidence in two cases that such abortions had happened, he thinks it is not too much to expect their more frequent occurrence. The explanation given of the manner in which elephantoid disease is produced applies to most, if not all, diseases, with one exception, which result from the presence of the parasite in the human body. The death of the parent parasite in the afferent lymphatic may give rise to an abscess, and the frequency with which abscess of the scrotum or thigh is met with in Chinese practice is, in Manson's opinion, attributable to this. Dr. Manson's report closes with an account of a case of abscess of the thigh, with varicose inguinal glands, in which fragments of a mature worm were discovered in the contents of the abscess.

WORKHOUSE POOR-LAW INQUIRY.

A VERY important Poor-law inquiry is now going on at the Poland-street workhouse of the Westminster Union, and which is being conducted by Messrs. Taylor (a barrister) and Hedley, Poor-law inspector. The allegations made are of the most serious description, the evidence as to some of which has already appeared in the columns of our daily contemporaries. Of course, as the case is still *sub judice*, we refrain from making any comments beyond this—that we learn that this inquiry, which was demanded by three of the guardians in the interests of humanity and the rightful treatment of the sick poor, is beset by many difficulties, owing to the extreme difficulty which Mr. Fraser has in collecting the evidence from the officers and inmates, seeing that he has no power to enter the workhouse and take their statements. Under these circumstances, we trust that the inspectors will afford every facility in their power to the minority of the guardians, and notably to Mr. Fraser of Soho-square, to whose sole initiative the inquiry is due.

DEATH OF SIR GEORGE JESSEL.

WE regret to record the death of the Right Hon. Sir George Jessel, Master of the Rolls. Sir George had suffered for some years from chronic disease of the heart and liver, together with glycosuria; but he continued heroically to discharge his responsible and laborious duties in spite of constant physical weakness and pain. Towards the end of last week his condition became somewhat suddenly worse, and on Sunday last he was seen by Dr. George Johnson and Dr. Quain, who found him extremely ill with anasarca and other symptoms indicative of grave organic disease of the heart and liver. Though the symptoms fluctuated, they were, from the first, of such a nature as to occasion the greatest anxiety to his medical advisers and friends. On Tuesday night Sir George seemed a little better. Early on Wednesday morning he got out of bed, was seized with cardiac syncope, and soon died. It will be remembered that Sir George Jessel was a member of the Royal Commission to inquire into the working of the Medical Acts, and was one of the most sagacious and acute critics of the evidence adduced. It was on his suggestion that many of the younger medical teachers and members of the profession were invited to state their views; and it is without doubt that the Report of the Commission, and the Medical Bill of the Government based upon it, owe much of their form to his mind. Sir George was a distinguished *alumnus* of University College, London, and his death is not only a serious loss to the legal world, but deprives the University of London of a wise, judicious, and experienced adviser.

"THE TIMES" OBITUARY AND THE RECENT SEVERE WEATHER.

THE recent unseasonably severe weather, following as it did an unusually mild January and February, has been exceptionally fatal to elderly and aged persons. This weather fatality has been strikingly reflected in *The Times* obituary announcements. On the 16th inst. these announcements recorded fifty-one deaths, which included the exceptional proportion of twenty octogenarians, of whom three were nonogenarians. These obituary notices invariably include, for obvious reasons, an undue proportion relating to adults; but after due allowance for this, the recent exceptional numbers of deceased octogenarians may be directly referred to weather influences. It may be noted that in the week ending the 17th inst. the deaths of eighty-seven persons over eighty years of age were registered in London alone, of whom eleven were nonogenarians.

PAYING OF WAGES IN PUBLIC-HOUSES.

THE passage of Lord Stanhope's Bill through the House of Lords is a matter for congratulation. It is easy to say that such measures are not necessary, or do not show sufficient confidence in the good sense and self-control of the working man. But in the face of the actual facts of human nature it is almost cruel to use such arguments. We consider the Bill a powerful contribution to the saving of wages for the purposes of home comfort, and wish it as much success in the Lower House as it has had in the Upper.

HEALTH LECTURES AT CHELTENHAM.

THE last of a series of three lectures on Public Health, in connexion with the proposed visit of the Sanitary Institute of Great Britain to Cheltenham next year, was delivered on the 15th inst. at the Assembly rooms of that town by Dr. Thorne Thorne of the Medical Department of the Local Government Board. The title of the lecture was "Channels for Conveying Infection to Households; How to Recognise and Deal with Them," and the subjects specially dealt with were, the laying-in of sewer air to dwellings by means of direct drain communications, the danger of intermittent water-service as tending to the distribution of infection in the water supplied to households, and the methods by which disease may be conveyed through the agency of ice and cream as opposed to water and milk. The lecture, which was illustrated by a series of large diagrams, was largely attended, the medical profession both of Cheltenham and neighbouring towns being well represented. The previous lectures had been delivered by Dr. Richardson, F.R.S., and Professor De Chaumont, F.R.S.

CHLOROSIS AND PYREXIA.

ALTHOUGH much irregular fever has been detected in cases of so-called progressive or pernicious anæmia, the temperature of the ordinary cases of chlorosis met with in young women is usually believed to be normal. This belief has been contested by M. Mollière, in a paper contributed to a recent number of the *Lyon Médical*. His observations were made on eight young women, who presented no other signs of disease beyond the anæmia for which they were under treatment. The temperature was taken every morning and evening in the rectum, over a period varying from two to fifty days, and was found to oscillate between 101·8° F. and 102·6°. The amount of urea eliminated per diem was estimated, and found to be normal. Mollière suggests that the increased heat may be explained by the hypothesis of a combustion the products of which are not so easily recognised as urea. Sulphate of quinine was given as an antipyretic, with the effect of reducing the temperature temporarily. This effect, if constant, would, according to Mollière, definitely establish the existence of abnormal body heat in chlorosis.

DR. PLAYFAIR, M.P.

A NORTHERN correspondent writes:—General satisfaction is felt by Dr. Lyon Playfair's constituents that he is able again to take his rightful place in the House of Commons as one of the foremost educationists having a seat there at present. The two able speeches he has already delivered show his old spirit and close acquaintance with all educational problems; and Scotchmen look to him for the staunch support of university interests when the new Medical Bill reaches the House of Commons. There can be no doubt of the deep concern with which this matter is viewed in the North, and the call to arms will meet with ready response if the universities deem their influence or their students to be unduly interfered with.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE recent resolution of the Council, to which allusion was made last week, and which created such dissatisfaction among candidates for the diploma of the College, has been rescinded. The Council last week withdrew the retrospective clause by substituting the word "after" 1882, instead of "before," a result which was not unexpected. The Council have of late shown a considerable want of tact in their dealings with students, and a marked want of encouragement towards candidates for the diploma of their College.

THE PROFESSION AND THE MEDICAL BILL.

WE would urge upon every enlightened member of the medical profession to use whatever opportunity he may have to secure the interest and support of the members of the House of Lords in the Medical Bill now before their lordships, especially as it is feared that the Corporations of London, with fatal shortsightedness, may be tempted to oppose the measure.

DEATH OF DR. LASEGUE.

WE regret to have to report the death of Dr. Lasègue, the celebrated alienist, which, though not unexpected, took place rather suddenly at 9 A.M. on Tuesday last. He had been in failing health for some time, owing to an attack of diabetes complicated with tuberculous disease of the lungs, but the immediate cause of death was attributed to embolism. Dr. Lasègue, who was universally beloved, was Professor of Clinical Medicine at La Pitié Hospital and Member of the Academy of Medicine, where, on the evening of the above day, the melancholy event was announced by the President in the most touching terms.

DISCUSSION ON DIABETES.

THE next meeting of the Pathological Society of London is to be devoted to a demonstration of the morbid anatomy of diabetes. The hon. secretaries will be glad to receive the names of those who wish to present specimens and take part in the discussion. Already the following gentlemen have intimated their intention of doing so:—Drs. Finlay, Hale White, Francis Taylor, Ralfe, Dreschfeld, S. Mackenzie, and Seymour Taylor.

AT a recent meeting of the New York Surgical Society, Dr. L. A. Stimson showed an instrument that he had employed as a substitute for preliminary tracheotomy in cases of operation about the nose and mouth. It consisted of a tube, six inches long, of the size of a catheter 38 F. gauge. About one inch and a half of one end is curved to almost a quarter of a circle, and is provided with a perforated flange, one-eighth of an inch broad. About the curved portion a sponge was fastened by stitching it to the flange, a piece of impervious tissue being placed between the sponge to prevent any blood or fluid which might soak into the sponge trickling into the throat. When the patient is anæsthetised this is to be passed into the pharynx to reach a little behind the uvula; loose sponges may then be packed into the mouth round the tube. Anæsthesia can be maintained through the tube. If it be passed too far down into the pharynx it causes a good deal of pharyngeal spasm. Dr. Stimson had tried it in an operation for removal of a cancerous tumour of the upper jaw, and he found that it was quite efficient in preventing the passage of any blood into the pharynx or larynx. This tube, of course, must not be confounded with others which have been described to be passed quite into the larynx, from which it differs as much as it excels them in utility for the cases in point.

AT a recent meeting of the Society of Engineers, Mr. Harry Olrick described "A New System of Treating Fæcal Matter," introduced by Baron de Podewils of Munich. The operations are all performed in closed vessels, so that no unpleasant odours arise; and, by a system of quadruple evaporation, the fuel necessary is reduced to a minimum. The resultant manure is said to be of high quality, and to realise from £9 to £10 per ton. The factory erected at Manchester has been in operation about three years, and, although labouring under the disadvantage of having to use coal costing £1 3*s.* per ton, is earning 20 per cent. dividends.

PROFESSOR MCKENDRICK will deliver, at the Royal Institution, in the months of April and May, a course of ten lectures on "Physiological Discovery," from an historical, biographical, and critical point of view. The subject will embrace a consideration of the circulation of the blood, respiration, muscular tissue, the formation of the blood, the mechanism of secretion, the nervous system, and nervous actions. The aim of the lecturer will be to trace the progress of physiological research from about the beginning of the sixteenth century to recent times, to sketch the lives of great discoverers, and to show the relation of their views to the present state of physiological science. The first lecture will be delivered on Tuesday, April 3rd.

ON Saturday, March 17th, in the lecture theatre of Westminster Hospital, a testimonial was presented to Mr. A. Pearce Gould, F.R.C.S., by the students of that hospital. The occasion was that of Mr. Gould's vacating the chair of Anatomy, which he had held for a period of six years. The testimonial consisted of a case of amputating and a case of lithotomy instruments, bearing the inscription: "Presented to A. Pearce Gould, Esq., F.R.C.S., by the Students of Westminster Hospital."

THE GROCERS' COMPANY, with the object of encouraging original research in sanitary science, have established three Research Scholarships of the value of £250 a year, and offer a Discovery prize of £1000, to be given once in every four years. The Company propose to appoint to two of the scholarships in May next and one in the corresponding month of 1884. The subject for the first Discovery prize will be announced next May, and the period of investigation will extend to Dec. 31st, 1886.

THE litigation between Dr. Abrath and the North-Eastern Railway Company has not yet terminated. It will be remembered that consequent upon the failure of the action by the company against Dr. Abrath for conspiracy and fraud, the latter unsuccessfully proceeded against the former for malicious prosecution. Dr. Abrath now makes application in the Queen's Bench Division for a new trial on the ground of misdirection and that the verdict was against the evidence.

A PRACTICAL demonstration of a means of purifying the Underground Railway by Dr. Neale's "Chemical Lung," without the aid of unsightly and unhealthy shafts, as also the best means of cooling and purifying sick and crowded rooms, law courts, &c., is announced to be given at No. 77, Church-street, Lisson-grove, Marylebone, on Thursday, the 29th inst., at 8.30 P.M.

AT a meeting of the ratepayers of Stoughton it was stated that the committee appointed last November to oppose the scheme for the establishment in that place of an infectious hospital had been successful in its endeavours, and an official intimation from the clerk of the Rural Sanitary Authority has been received to the effect that the Stoughton site has been abandoned.

DR. RUTHERFORD, of Woodilee Asylum, Lenzie, near Glasgow, has been appointed Medical Superintendent of the Crichton Royal Institution, Dumfries. The position is a very desirable one, and several of our best-known Scottish alienists were candidates.

WE are glad to learn that Professor Sayre of New York is better, and has returned to his professional duties. Dr. Van Buren, who is suffering from hemiplegia, continues in a very critical state.

THE chair of Natural History in St. Andrews University, rendered vacant by the resignation of Dr. Alleyne Nicholson, has been filled by the appointment of Dr. W. C. M'Intosh, F.R.S.

PROFESSOR CHARCOT, of Paris, has been elected an honorary member of the Royal Irish Academy for his important researches in pathological anatomy and physiology, especially of the nervous system.

DR. WATERS, of Chester, presided at the dinner of Irish graduates on St. Patrick's day. The occasion will be pleasantly remembered by the guests.

TETTENHAM COLLEGE, Wolverhampton, has been temporarily closed in consequence of an outbreak of diphtheria in the establishment.

THE Orkney Islands are at present suffering from a widespread and unwonted epidemic of measles. The disease, however, is said to be of a mild type.

INFORMATION has just been received of the death, at Tubingen, of Professor von Bruns.

THE MEDICAL BILL.

(*Continued from p. 471.*)

PART III.

COLONIAL AND FOREIGN PRACTITIONERS.

22. On and after the appointed day where a person shows that he holds some recognised colonial medical diploma or diplomas (as hereinafter defined) granted to him in a British possession, and that he is of good character, he shall upon payment of the registration fee, and on application to the registrar, be entitled, without examination in the United Kingdom, to be registered as a colonial practitioner in the Medical Register; provided that he proves any of the following circumstances:—(1) That he was practising medicine or surgery or a branch of medicine or surgery in the United Kingdom on the said appointed day, and that he has continuously practised the same either in the United Kingdom or elsewhere for a period of not less than ten years immediately preceding the appointed day; or (2) that his diploma or diplomas was or were granted to him at a time when he was not domiciled in the United Kingdom; or in the course of a period of not less than five years, during the whole of which he resided out of the United Kingdom.

23. On and after the said appointed day where a person shows that he holds some recognised foreign medical diploma or diplomas (as hereinafter defined) granted in a foreign country, and that he is of good character, he shall upon payment of the registration fee, and on application to the registrar, be entitled, without examination in the United Kingdom, to be registered as a foreign practitioner in the Medical Register; provided that he proves any of the following circumstances:—(1) That he is not a British subject; or (2) that being a British subject his diploma or diplomas was or were granted to him at a time when he was not domiciled in the United Kingdom, or was or were granted to him in the course of a period of not less than five years, during the whole of which he resided out of the United Kingdom; or (3) that being a British subject he was practising medicine or surgery, or a branch of medicine or surgery, in the United Kingdom on the said appointed day, and that he has so continuously practised the same for a period of not less than ten years immediately

preceding the said appointed day in the United Kingdom or elsewhere.

24. The medical diploma or diplomas granted in a British possession or in a foreign country, which are to be deemed such recognised colonial or foreign medical diploma or diplomas as are required for the purposes of this Act, shall be such medical diploma or diplomas as may be recognised for the time being by the Medical Council as furnishing a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery, and as entitling the holder thereof to practise medicine, surgery, and midwifery in such British possession or foreign country. If a person is refused registration as a colonial practitioner or as a foreign practitioner on the ground that the medical diploma or diplomas held or obtained by such person is or are not such recognised medical diploma or diplomas as above defined, or on any other ground whatever, the registrar shall, if required, state in writing the reason for such refusal, and the person so refused registration may appeal to the Privy Council, and the Privy Council, after communication with the Medical Council, may dismiss the appeal or may order the Medical Council to enter the name of the appellant on the register, and further, if the refusal to register him has arisen from an unwillingness of the Medical Council to recognise such medical diploma or diplomas, or any of them, the Privy Council may order the Medical Council to recognise such diploma or diplomas, or any of them, and any order made by the Privy Council in pursuance of this section shall be duly obeyed. A person may, if so entitled under this Act, be registered both as a colonial and foreign practitioner.

25. Any person holding a medical diploma, entitling him to practise medicine or surgery in a British possession, shall be entitled to hold an appointment as a medical officer in any vessel registered in that possession.

PART IV.

MEDICAL TITLES, MEDICAL REGISTER, AND MEDICAL AUTHORITIES.

26. On and after the appointed day it shall be lawful for any registered medical practitioner who has passed a final examination as in this Act mentioned, if he thinks fit so to do, to use after his name the title of Licentiate of the Medical Council in Medicine, Surgery, and Midwifery, or any letters indicative of such title.

27. On and after the said appointed day medical titles shall be divided into two classes:—(*a*) Medical qualifying titles, and (*b*) medical higher titles, and any medical title which is not a qualifying title or a higher title within the meaning of this Act shall not be entered on the register. "Medical qualifying title" in this Act means: as respects a person whose first registration as a medical practitioner takes place on or after the said appointed day—(*a*) in the case of a home practitioner the title of "Licentiate of the Medical Council in Medicine, Surgery, and Midwifery;" and (*b*) in the case of a colonial or foreign practitioner any title indicating or implying that he has obtained a recognised diploma: as respects a person whose first registration as a medical practitioner has taken place before the said appointed day; any title indicating or implying that a person has obtained a diploma whereby before the said appointed day he became qualified to be registered as a medical practitioner, also any other title which before the said appointed day he had a right to have entered on the Medical Register as a medical title. "Medical higher title" in this Act means any title indicating or implying the grant of a diploma which may appear to the Medical Council to have been granted after examination in respect of a substantially higher degree of knowledge than is required to obtain a qualifying diploma under this Act, or a diploma which has been granted as a testimonial of special distinction, and appears to the Medical Council to deserve recognition as a higher medical diploma. If any authority having power to grant medical diplomas feels aggrieved by the refusal of the Medical Council to recognise any medical diploma granted by it as conferring a medical higher title within the meaning of this Act, such body may appeal to the Privy Council, and the Privy Council may, if it thinks fit, order the Medical Council to recognise such diploma as conferring a medical higher title within the meaning of this Act, and any order made by the Privy Council in pursuance of this section shall be duly obeyed. It shall be lawful for any registered medical practitioner who on or after the said appointed day may obtain any diploma authorising him to use a medical higher title to cause a description of such diploma to be added to his name in a separate column of the Medical Register, and to take or use any medical title which such diploma authorises him to take or use. Where in the case of a person registered as a medical practitioner before the said appointed day a qualifying title may in pursuance of this Act be declared by the Medical Council or the Privy Council on appeal to be a higher title, such title shall be entered on the Register as a higher title as well as a qualifying title.

28.—(1) On and after the said appointed day if any person, whether a registered medical practitioner or not, takes or uses a medical title which he is not entitled to take or use, he shall on summary conviction be liable to a penalty not exceeding twenty pounds. (2) On and after the aforesaid day if any person, whether a registered medical practitioner or not, takes or uses a medical title which is by this Act not permitted to be entered on the Register, he shall, on summary conviction, be liable to a penalty not exceeding twenty pounds, provided that a person shall not be liable to such penalty in either of the following cases:—First, if he shows that he holds a medical diploma which authorises him to use the medical title complained of, and that such diploma is an existing diploma granted by a medical authority authorised to return a member to a medical board under this Act; or, secondly, if he shows that he is not ordinarily resident in the United Kingdom, and that he holds a medical diploma which authorises him to use the medical title complained of and also entitles him to practise in the country in which the diploma was granted. "An existing diploma" means a diploma capable of being granted at the time of the passing of this Act. (3) On and after the aforesaid day if any person who is not a registered medical practitioner represents himself to be a registered medical practitioner, or uses any name, title, addition, or description implying that he is a registered medical practitioner, he shall, on summary conviction, be liable to a penalty not exceeding £20, provided that he shall not be liable to such penalty, if he shows that he has been registered, and continues to be entitled to be registered in the Medical Register, but that his name has been erased therefrom, on the ground only that he has ceased to practise, or been deemed to have ceased to practise. (4) On and after the aforesaid day if any person who is not a registered medical practitioner, and who practises for gain or professes to practise or publishes his name as practising medicine or surgery, or who receives any payment for practising medicine or surgery, (*a*) uses the designation of, or represents himself to be a physician, surgeon, doctor, or apothecary; or (*b*) uses any designation or description denoting that he is qualified by law to practise medicine, surgery, or midwifery, he shall, on summary conviction, be liable to a penalty not exceeding £20. (5) On and after the said appointed day prosecutions for offences against this section may be undertaken by the persons hereinafter mentioned, but by no other person or bodies of persons, that is to say: (1) In any part of the United Kingdom, by any person authorised by the Medical Council; and (2) in England, by the Public Prosecutor, or by the Attorney-General, or Solicitor-General, or by any person authorised by the medical board of England, or any medical authority for the time being authorised to return a member to such medical board, or by any person authorised by the Public Prosecutor, Attorney-General, or Solicitor-General; and (3) in Scotland, by the Procurator Fiscal, or by the Lord Advocate, or by any person authorised by the medical board for Scotland, or by any medical authority for the time being authorised to return a member to such medical board, or by any person authorised by the Procurator Fiscal, or Lord Advocate; and (4) in Ireland, by the Crown Prosecutor, or by the Attorney-General or Solicitor-General for Ireland, or by any person authorised by the Medical Board for Ireland, or by any medical authority for the time being authorised to return a member to such medical board, or by any person authorised by the Crown Prosecutor, Attorney-General, or Solicitor-General. This section shall not prevent: (1) A person from using the designation of midwife, or (2) a person lawfully holding from any of the medical authorities recognised by the Medical Council a licence in midwifery, or a certificate of fitness to practise as a midwife, from taking or using the designation of licentiate in midwifery or certified midwife, or (3) a person registered in the Dentists' Register under the Dentists Act, 1878, from taking or using any name, title, addition, or description which he is entitled to take or use under that Act.

EXTIRPATION OF A SINGLE DISPLACED KIDNEY.

THE *New York Medical Journal* of Feb. 17th contains a paper by Dr. Polk, which he had contributed to the New York Obstetrical Society, and in which he describes the details of the remarkable case already briefly alluded to in our columns. The case is so full of interest, clinical and physiological, that we offer no excuse for giving a very full account of it, merely prefacing our remarks by thanking Dr. Polk for publishing the case in such detail.

The patient was a well-nourished girl, aged nineteen, who complained of periodical pain in the left iliac fossa and the back, which was sometimes accompanied by a discharge of blood—probably with the urine. She was examined under ether, and it was found that there was neither vagina nor uterus. A firm, freely movable, oval tumour was found in the left iliac fossa in the seat of the attacks of pain. The right iliac fossa was normal. The left lumbar region was tympanitic on percussion; the right was dull. Bimanual examination of the loins gave no result. She had an attack of pain while in the Bellevue Hospital, and passed a small quantity of blood in the urine that day. The diagnosis of displaced kidney was made. At the patient's urgent request an operation was undertaken. Dr. Polk made an incision above Poupart's ligament, and removed the tumour without opening the peritoneal cavity; the ligatured pedicle was brought out through the lower end of the wound. The operation was performed with all antiseptic precautions. The subsequent history of the case, which is very fully described, we may summarise thus:—The patient lived for eleven days and one hour after the operation, and the wound progressed satisfactorily, the superficial incision, except at its lower end, uniting firmly in a few days. Vomiting was the earliest and most persistent symptom; it came on a few hours after the operation, was most urgent on the second day—eighteen times in twenty-four hours,—and continued more or less until the end of the tenth day; no description of the vomited matter is given. At first there was constipation, but this was succeeded by diarrhœa, with copious watery offensive motions. The temperature reached its maximum (101·5°) on the evening of the second day, and was not above normal after the fourth day. The pulse was at first rapid and very weak, but quickly recovered itself, and varied from 80 to 100, just before death falling to 59. The patient perspired freely for about two hours during the evening after the operation; then the skin became dry, and pilocarpine was injected, producing profuse diaphoresis, salivation, and once a free discharge from the bronchial mucous membrane; the hot-air bath was also used twice. On the ninth day, without any diaphoretic treatment, it was noticed that the skin perspired freely. The pupils were evenly contracted till just before death. She was able to sleep up to the tenth day. On the third day twitchings of the fingers were noticed whilst she was in a hot-air bath, and at the same time she complained of not being able to see plainly. On the fifth day, again, slight jerking movements of the fingers and arm were noticed, and anæsthesia of the right lower limb, which lasted twenty-four hours only; in the evening of this day she had an attack of distinct convulsions of both upper and lower limbs, and became temporarily cyanosed. Next day (sixth) she talked wildly, but would stop when spoken to; and her sleep was disturbed by starts and screams. On the seventh day there were dimness of vision, temporary slight delirium, occasional twitchings of the hands, great restlessness, and loss of strength; but on the following day these symptoms abated, and she was quiet, with only occasional jerks and dimness of sight. On the ninth day these symptoms continued, she slept a great deal, and when awake complained of a pricking sensation over the whole body; she had an attack of hiccough. In the morning of the tenth day the patient was in a semi-somnolent state, which deepened into stupor; but towards evening this passed off and she fell asleep. The general pruritus was very annoying. A rose-coloured eruption came out on the arms and neck, and became very profuse next day. On the eleventh day she was quite lucid; convulsive movements of the arms were generally present, most marked during sleep; frequent attacks of hiccough and intense itching. Later on she became unconscious and slightly delirious; clonic, followed by general tonic, convulsions came on, and she died comatose, the heart's action ceasing before the respiration. The catheter was frequently passed, and at first nothing was drawn from the bladder; but on the sixth day two drachms of fluid were drawn off, next day nine drachms, the next day six drachms, the next three drachms, the tenth day a few drops only, the eleventh four drachms. This fluid was amber-coloured, cloudy, alkaline, contained bladder epithelium and a few red and white blood cells; it became solid on boiling, and on analysis was shown to contain urea. The pathological report is furnished by Dr. W. H. Welch. There was no trace of œdema anywhere. The mammæ were large, and on section milk flowed freely. The pericardium contained 100 cubic centimetres of clear serum. No œdema or congestion of lungs; no fluid in pleural or peritoneal sacs. The stomach and intestines, especially the small, showed acute catarrh of the mucous membrane. No trace of right kidney, ureter, or renal artery. Two renal arteries came off from the left side of the aorta; both suprarenal capsules present; the left ureter was about twice its normal size. Acute catarrh of bladder. Uterus and vagina with clitoris absent. Fallopian tubes rudimentary; parovarium normal. Ovaries large and healthy in structure, with cicatrices of ruptured Graafian follicles; the left was placed over the kidney before its removal, the right lay in the right iliac fossa. Round ligament of uterus present on each side, blended with ovarian ligament, and ending in subperitoneal tissue. The kidney that was removed was of normal structure; it was large, and weighed 98 grammes.

Dr. Polk reviews the various methods of establishing the presence and functional activity of two kidneys which have been introduced, and suggests a plan of his own, which he believes to be superior to the others. It consists in passing a very curved metal catheter into the bladder, turning its bend sharp round to one side, and then, with two fingers in the rectum, to press against the catheter. He believes that in this way the orifice of each ureter can be compressed in turn, and by previous emptying and washing out the bladder, and careful examination of the urine secreted while a ureter is compressed, an estimate can be formed of the activity of each kidney. This point could only be decided by actual experiment.

It is difficult to say whether this remarkable case is more interesting from the clinical, the physiological, or the pathological point of view. We believe that this is not the only occasion on which a single kidney has been removed. When the operation is performed through an abdominal section, such an accident is so easily prevented that it should never be allowed to occur; and in an instance like this, where there were such abundant signs of congenital malformations, there was everything to put the surgeon on his guard. Further, it is clear, from the history of the case, that it was not the displaced kidney, but the ovary, which was troubling the patient, and that it was oöphorectomy, and not nephrectomy, which was called for. So far as the operation itself is concerned, it was well planned and skilfully carried out, but it is the history of the patient subsequent to this that will excite most interest. The bare fact of a patient living eleven days after sudden deprivation of her whole urinary excretory organs is itself very remarkable, and during the greater part of that time her symptoms were not so severe as might have been expected. The history is defective in some few points; the sweat and alvine evacuations do not appear to have been analysed to estimate the daily excretion of urea by these channels; nor is there any account of an ophthalmoscopic examination, although the patient complained of loss of vision. The entire absence of œdema is another unusual and noteworthy feature of the case. The fluid that was withdrawn from the bladder on three days was no doubt the exudation from the inflamed mucous membrane, and it would have been interesting to have had an analysis of this fluid made, especially with a view to ascertain if it contained any urinary products. These and many more points are of interest to the physiologist. Patho-

logically, it would seem to have been a case of fusion of the two kidneys into one organ, as is well known to occur sometimes, and has been demonstrated by Dr. Coupland in a communication to the Pathological Society. Dr. Welch gives some measurements of the renal tubules, from which he infers that the enlargement of the organ was due to hyperplasia, and not to hypertrophy; for he finds the tubules only slightly larger than normal, the difference not being sufficient to account for the increase in size of the organ.

THE UNIVERSITY BOAT RACE.

THAT the process known as "training" is one that requires no little judgment, need not be said. If a man be judiciously trained, he should arrive at a maximum of health and strength. If this object be not attained, or, still more, if his health deteriorate during the ordeal, then his "training" so called has been useless, or even mischievous to him, as the case may be. The superfluous fat having been removed from the body of a young adult by hard work and regulated diet, the weight of the individual should either remain stationary or increase, and if a man continue to lose weight, and such loss be not due to decrease of fat, it is almost certainly due to the wasting of other tissues which are needed for use in any athletic contest. The above remarks are prompted by a careful study of the weights of the oarsmen who took part in the recent University Boat Race. Such study has shown us that for the past three years at least, the winning crew has gained in weight at the end of its training, while the losing crew has afforded evidence of over-training by a failure to maintain the body weight.

Let us compare the crews.

1883.

OXFORD.

No.	Weight on March 5th.	Weight on March 16th.	Increase.	Decrease.
	st. lb.	st. lb.	lb.	lb.
1	10 8	10 11½	3½	—
2	11 2	11 4	2	—
3	12 0	12 0	—	—
4	12 5	12 6½	1½	—
5	12 12	13 2½	4½	—
6	12 12	13 1	3	—
7	10 12	11 1	3	—
Stroke	11 2	11 0	—	2
Total. .	93 11	94 12½	15½	—

CAMBRIDGE.

No.	Weight on March 5th.	Weight on March 16th.	Increase.	Decrease.
	st. lb.	st. lb.	lb.	lb.
1	10 9	10 7	—	2
2	12 0	12 2	2	—
3	12 0	11 13	—	1
4	12 3	12 1	—	2
5	13 5	13 4	—	1
6	12 13	12 12	—	1
7	13 8	13 4	—	4
Stroke	11 11	11 7	—	4
Total. .	98 7	97 8	—	13

Oxford won by four lengths.

From the above tables it is clear that the winning crew during the last fortnight of its training gained 15½lb., while their antagonists lost 13lb.

A comparison of the weights of the crews of the last two years gives a very similar result. Thus—

1881.

OXFORD.

No.	Weight on March 28th.	Weight on April 9th.	Increase.	Decrease.
	st. lb.	st. lb.	lb.	lb.
1	10 9	10 11	2	—
2	11 1	11 3	2	—
3	12 1	12 7	6	—
4	11 8	11 11	3	—
5	13 0	13 3	3	—
6	12 5	12 7	2	—
7	11 8	11 0	—	8
Stroke	11 0	11 0½	0½	—
Total. .	93 4	94 0½	10½	—

CAMBRIDGE.

No.	Weight on March 28th.	Weight on April 9th.	Increase.	Decrease.
	st. lb.	st. lb.	lb.	lb.
1	10 12	10 7	—	5
2	11 11½	11 10½	—	1
3	12 4½	12 3½	—	1
4	12 0½	11 13	—	1½
5	12 7	12 4½	—	2½
6	12 0½	11 13	—	1½
7	11 10½	11 9	—	1½
Stroke	11 9½	11 8	—	1½
Total. .	95 0	93 12½	—	15½

Oxford won by three lengths.

1882.

OXFORD.

No.	Weight on March 20th.	Weight on March 31st.	Increase.	Decrease.
	st. lb.	st. lb.	lb.	lb.
1	10 12	10 13	1	—
2	10 13½	11 1½	2	—
3	12 3	12 3½	0½	—
4	12 9	12 12	3	—
5	13 0½	13 4½	4	—
6	11 13	12 0	1	—
7	12 5	12 6	1	—
Stroke	9 2	9 6½	4½	—
Total. .	93 2	94 5	17	—

CAMBRIDGE.

No.	Weight on March 20th.	Weight on March 31st.	Increase.	Decrease.
	st. lb.	st. lb.	lb.	lb.
1	11 2	11 1	—	1
2	12 4	12 1½	—	2½
3	12 9	12 7	—	2
4	12 0	12 0½	0½	—
5	12 1	11 12	—	3
6	12 12	13 0	2	—
7	12 0	11 7	—	7
Stroke	11 4	11 1	—	3
Total. .	96 4	95 2	—	16

Oxford won by seven lengths.

Neither time nor space permits us to pursue this subject further, but we hope that some young athlete with a taste for statistics will continue it, and ascertain whether, as a rule, the winning crew have gained or lost weight during the time of training before the contest. For such an inquiry it is desirable to know the heights as well as the weights of the crews.

INDIAN HEALTH STATISTICS.

No. I.

Eighteenth Annual Report of the Sanitary Commissioner with the Government of India, 1881. With Appendices and Returns.

THE results for the European army in India in 1881, as shown in the Report of the Sanitary Commissioner, just published, are very favourable, the sickness and mortality having been lower than in any of the three preceding years. The average strength of the European troops during the year was 58,728; the admissions into hospital were in the ratio of 1604, the deaths from all causes 16·86, the invaliding 38·4, and the constantly non-effective from sickness 69·7 per 1000 of the strength. Compared with the average of the decennial period 1870–79, the admissions and mean daily sick were higher, but the deaths were 2½ and the invalided 4 per 1000 lower in 1881. The relative health of the troops in each of the three Presidencies and in Southern Afghanistan is shown in the following abstract:—

—	Average strength.	Ratio per 1000 of strength.			
		Admitted into hospital.	Died.	Invalided.	Constantly sick.
Bengal . . .	35,901	1729	17·05	37·9	71·9
Madras . . .	10,391	1160	10·97	27·9	59·7
Bombay . . .	9,895	1784	13·44	53·0	71·8
S. Afghanistan .	2,541	968	51·55	26·6	71·6

This shows Madras to have been in all respects more healthy than either Bengal or Bombay. The deaths and invaliding in it were very slightly higher than in 1880, but were much below the average. The admissions into hospital in Bengal were above the average of the preceding ten years, but the mortality and invaliding were each four per 1000 under that average. In Bombay the admissions, invaliding, and mean sick were above, but the mortality below, the average. The force employed in Southern Afghanistan was composed of troops partly from Bengal and partly from Bombay. While it furnished a low ratio of admissions the deaths and mean daily sick were high, a result probably of previous field service, the chief causes being enteric fever, dysentery, pneumonia, and pleurisy. The diseases from which the troops in Madras enjoyed an exemption, compared with those in the other two Presidencies, were malarial fevers and diseases of the respiratory system, but the admissions from dysentery and hepatitis were considerably higher in it, though without causing any excess in the mortality. Cholera in Bengal and enteric fever in Madras and Bombay were the chief causes of the higher death-rates. The class of diseases which gave rise to the greatest amount of sickness in all the Presidencies was fevers, the admissions per 1000 of strength having been in Bombay 845, Bengal 770, and Madras 280. The most prevalent form was the intermittent. Enteric fever caused 6·3 admissions and 2·62 deaths per 1000 in Bengal, 4·2 and 2·83 in Bombay, and ·9 and ·58 in Madras. In the force employed in Southern Afghanistan the admissions were as high as 19·7, and the deaths 10·62 per 1000. In Bengal, though the disease was very widely distributed, the stations at which its prevalence was marked were Lucknow, Rawul Pindi, Bareilly, Meean Meer, Dum-Dum, and Rhanikhet. The influence of age on mortality by enteric fever is shown by the deaths among men under twenty-five having been in the proportion of 4·56 per 1000 of the strength at that age, 1·57 from twenty-five to twenty-nine, and 0·79 from thirty to thirty-four. These results may possibly have been to some extent influenced also by the periods of residence of the men in India; for the returns show the deaths to have been distributed in regard to this as follows:—Two years and under 4·55 per 1000, third to sixth year 2·07, seventh to tenth 0·56, tenth and upwards 0·40. April, May, and June are the months in which the disease is most prevalent in Bengal. Dengue, which had entirely ceased in the European army since 1876, re-appeared as an epidemic in Bengal in February, and continued till the end of the year. It seems to have been confined to Lucknow and Cawnpore; at the former 89, and at the latter 24, cases were admitted.

Next to fevers in point of frequency as regards mortality comes cholera, the deaths by which in 1881 were in the proportion of 2·33 per 1000 of the strength. In Bengal they amounted to 3·23, in Madras to 1·73, and in Bombay to ·30. In Bengal it prevailed as an epidemic at Lucknow from August to November, at Meean Meer from June to August, and at Fort Lahore in July and August. At Lucknow 21 cases occurred in a force of 2441 men, at Meean Meer 78 in these three months in a force of 1011, and at Fort Lahore 14 in a strength of 116 men. The diseases which, next to fevers, were the cause of the greatest amount of sickness were venereal, by which the admissions into hospital were 276 in Bengal, 258 in Madras, and 261 in Bombay per 1000, or an average of upwards of one-fourth of the strength in the course of the year. The returns show a considerable increase of primary syphilis in Bengal, but a decrease in Madras and Bombay. Apoplexy caused 12 deaths in a force of 1011 men at Meean Meer, but no information is given of the circumstances under which so great a mortality occurred. The ratio of deaths by it throughout the Presidency was 1·75 per 1000.

A table is given in the report to show the unfavourable influence of the climate upon newly arrived corps as compared with those which have been longer in the country. As regards mortality, it shows a death-rate among the former of 23·64, against 16·86 in the latter. Unfortunately the figures upon which this calculation has been made are not stated, and an analysis of the tables appended to the report does not bear out these results. It shows the average strength, during 1881, of the corps which arrived in India from September, 1880, to April, 1881, to have been 6489, and the deaths 107, being in the proportion of 16·49 per 1000, or a fraction under the average. It is worthy of note that if this mortality be divided according to arms of the service the proportion in the artillery, 1316 strong, is as high as 27·35 per 1000; while in the line it is only 11·95, although in the latter is included the 61st Regiment, which was on field service in Southern Afghanistan. This marked difference may have been in some degree due to the distribution of the troops, for the artillery were almost entirely quartered in Bengal, while two-thirds of the line were in Madras and Bombay. The death-rate among the recently arrived corps was in Bengal 19·17, in Madras and Bombay 14·36, and in the 61st in Afghanistan 34·48 per 1000.

The experience of the army in India affords important evidence of the value of vaccination and revaccination. Although small-pox is widely prevalent in India, only fifteen cases and one death occurred during the year among the troops.

The influence of age on mortality from all causes among the troops is shown in the following table of deaths per 1000 of the strength at the several periods of life:—

Age . .	Under 20	20–4	25–9	30–4	35 and upw.
Deaths .	9·56	15·30	16·62	18·72	24·59

The number serving under twenty was only 1255, and was, therefore, too small to justify any positive deductions. The influence of length of residence in India upon the deaths per 1000 from all causes was as follows:—

	1st & 2nd years.	3rd to 6th.	7th to 10th.	10th & upw.
Deaths .	17·00	17·13	15·52	18·50

There appears to be a reduction in the third period as compared with the two preceding, but it is difficult to estimate how much of this is due to the great amount of invaliding which takes place in the second period.

The mortality of the officers in India during the year amounted to 18·85 per 1000, or two per 1000 higher than among the men, but this includes deaths among officers on leave. The death-rate among the officers of the British force was 20·10, and of the Indian army 17·48 per 1000 of the strength.

The mortality among the soldiers' wives was in the ratio of 25·93 per 1000, the chief causes of death being childbirth and abortion, and cholera. Among the children it amounted to 60·17 per 1000, convulsions and diarrhœa being the two most fatal diseases.

THE salary of Mr. Buncombe, Medical Officer of the Bow Union Infirmary, has been increased from £300 to £350 per annum.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns, 6039 births and 4300 deaths were registered during the week ending the 17th inst. The annual death-rate in these towns, which had slowly increased from 21·9 to 23·0 per 1000 in the four preceding weeks, further rose last week to 26·0. During the first eleven weeks of the current quarter, however, the death-rate these towns averaged only 21·3 per 1000, against 25·9, in 24·2, and 24·9 in the corresponding periods of the three years 1880-1-2. The lowest rates in these towns last week were 18·7 in Portsmouth, 18·9 in Salford, 18·9 in Derby, and 19·2 in Brighton. The rates in the other towns ranged upwards to 34·3 in Liverpool, 34·9 in Manchester, 35·9 in Nottingham, and 37·1 in Preston. The deaths referred to the principal zymotic diseases in these twenty-eight towns, which had been but 334 and 327 in the two previous weeks, rose to 399 last week; of these 119 resulted from whooping-cough, 78 from measles, 67 from scarlet fever, 61 from "fever" (principally enteric), 39 from diarrhœa, 28 from diphtheria, and 7 from small-pox. The lowest death-rates from these zymotic diseases occurred last week in Brighton and Huddersfield, and the highest in Liverpool and Hull. Whooping-cough was proportionally most fatal in Cardiff and Hull; scarlet fever in Sheffield and Leeds; and "fever" in Birkenhead, Liverpool, and Plymouth. The 28 deaths from diphtheria in the twenty-eight towns included 18 in London. Small-pox caused 3 deaths in Newcastle-upon-Tyne, 2 in Birmingham, and one both in London and in Hull. The number of small-pox patients in the metropolitan asylum hospitals, which had been 89 and 97 on the two preceding Saturdays, was 94 at the end of last week; 13 new cases of small-pox were admitted to these hospitals during last week. The deaths referred to the diseases of the respiratory organs in London, which had been 388 and 395 in the two preceding weeks, rose to 548 last week. The causes of 110, or 2·6 per cent., of the deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Birmingham, Cardiff, and in four other smaller towns. The proportions of uncertified deaths were largest in Nottingham, Salford, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been equal to 25·1 and 26·4 per 1000 in the two preceding weeks, further rose to 28·8 in the week ending the 17th inst.; this rate exceeded by 2·8 the mean rate last week in the twenty-eight English towns. The rates in the Scotch towns ranged from 16·7 in Greenock to 34·8 in Dundee. The deaths in the eight towns included 115 which were referred to the principal zymotic diseases; these deaths were equal to an annual rate of 4·8 per 1000, which was no less than double the mean rate from the same diseases in the large English towns. Whooping-cough fatality showed an increase, causing 57 deaths in the eight towns, against 45 and 47 in the two preceding weeks; of these, 30 occurred in Glasgow, 13 in Dundee, and 6 in Edinburgh. The 18 fatal cases of measles, of which 16 were returned in Glasgow, showed a decline of four from those in the previous week. The deaths referred to diphtheria were also fewer by 5 than the number in the previous week, and included 6 in Glasgow and 3 both in Edinburgh and Dundee. The 11 deaths from "fever" corresponded with the number in the previous week; 6 occurred in Glasgow and 3 in Edinburgh. Four of the five fatal cases of scarlet fever were returned in Glasgow. The 11 deaths attributed to diarrhœa were considerably below the average for the season. The deaths referred to acute diseases of the lungs in the eight towns were 177, and exceeded by 63 the number returned in the corresponding week of last year. The causes of 105, or more than 15 per cent., of the deaths registered in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had been equal to 34·8 and 35·5 per 1000 in the two preceding weeks, was 35·4 in the week ending the 17th inst. During the first eleven weeks of the current quarter the death-rate in the city averaged no less than 34·0 per 1000, against 21·3 in London and 21·5 in Edinburgh. The 237 deaths in Dublin last week were within one of the number in the previous week, and included 14 from whooping-cough, 5 from "fever," 3 from diarrhœa, and not one either from small-pox, measles, scarlet fever, or diphtheria. Thus 22 deaths were referred to these principal zymotic diseases, corresponding with the number in the previous week; these were equal to an annual rate of 3·3 per 1000, against 2·1 and 3·3 from the same diseases in London and Edinburgh. The fatal cases of whooping-cough, which had been 9 and 12 in the two previous weeks, further rose to 14 last week. The deaths referred to "fever," however, further declined to 5 from numbers ranging between 14 and 7 in the five previous weeks. The 3 deaths attributed to diarrhœa corresponded with the number in the previous week. The causes of 34, or nearly 13 per cent., of the deaths registered during the week were not certified.

THE SERVICES.

ARMY MEDICAL DEPARTMENT.—Surgeon-Major Frederick William Wade, to be Brigade Surgeon, vice G. Whitla, granted retired pay.

INDIA OFFICE.—Brigade Surgeon Robert Dempster, of the Madras Army, and Surgeon-Major Horace Day, M.D., of the Bombay Army, have been permitted to retire from the Service.

BREVET.—Deputy Surgeon-General Sir Alexander Christison, Bart., M.D., of the Bengal Army, to be Surgeon-General. Brigade Surgeon Hunter Adam, of the Madras Army, to be Deputy Surgeon-General. Surgeons-Major John Berry White and Thomas Edmonstone Charles, M.D., of the Bengal Army, to be Brigade Surgeons.

ROYAL NAVAL ARTILLERY VOLUNTEERS.—London Brigade: Charles Swaby Smith, M.R.C.S., to be Surgeon. Liverpool Brigade: Henry Briggs, M.B., M.R.C.S., to be Surgeon.

ADMIRALTY.—Fleet Surgeon Duncan McNab Johnston has been placed on the retired list of his rank from the 16th inst.

The following appointments have been made:—Staff-Surgeon Gerard Irvine, to the *Espiègle*, vice James Dunlop (Mr. Dow, lent to *Espiègle* from *Nelson*, returning to that ship); Surgeon Horatio S. R. Sparrow, to the *Diamond*, vice G. J. Irvine; Surgeon George M. Cuffe, to the *Antelope*.

Correspondence.

"Audi alteram partem."

THE PATHOLOGY AND TREATMENT OF RHEUMATIC ENDOCARDITIS.

To the Editor of THE LANCET.

SIR,—Dr. Sansom gives such an erroneous impression of what I hold and have written on the above subject that I must crave space for a few words in reply to him. He quotes from my last letter to you the following sentence:—"When the endocardium is affected in acute rheumatism, there is no general inflammation of its surface, such as is found in the pericardium and synovial membranes. The mischief is limited to a small portion of one surface of the affected valves." Here I refer solely to the endocardial lining, and the sentence as it stands is absolutely correct. But when Dr. Sansom separated it from its context, and remarked upon it as embodying my views of the pathology of rheumatic endocarditis, he ought to have known that he was giving a very inaccurate account of what I have written on that subject. If he will take the trouble to read again the chapter on endocarditis in my book on rheumatism, to which he has referred, he will find that our views as to its pathology are not so much at variance as he supposes, and that much of what he teaches in 1883 had already been insisted on by me in 1881; as the following quotations will show. Dr. Sansom says that "one of the chief purposes of his first Lettsomian Lecture was to show

that the endocarditis of acute rheumatism is much more widely spread than appears by a naked-eye inspection;" and proceeds thus to describe some of the microscopic changes referred to: "The whole tissue of the valves is swollen; it is seen under the microscope to have lost its normal fibrous appearance and to be infiltrated with cellular elements." Wherein does that sentence differ from the following one taken from page 137 of my book: "The inflammatory process which takes place in the valvular fibrous tissue gives rise to multiplication of its cellular elements, and consequent thickening of the valve." The two sentences are so like each other, and so exactly describe the same morbid change, that they might be transposed. The chief difference between them is that mine was written in 1881 and Dr. Sansom's in 1883. Continuing the subject, he says, "The inflammation, moreover, is not confined to the endocardium, the exudation spreads to, and infiltrates, the muscular structure to which the valves and the tendinous cords are attached, and even the root of the aorta." Here, again, Dr. Sansom is treading in my footsteps. If he will refer to the chapters in my book bearing on the subject, he will find much on the subject of rheumatic inflammation of the muscles and fibrous rings, including the root of the aorta. Out of consideration for your space I satisfy myself with two brief quotations: "The fibrous rings are a common seat of rheumatic inflammation" (page 162). "The muscular substance is frequently involved in the morbid process" (page 165), to which I would add one extract from my former letter to you: "The parts which suffer in the heart are the fibrous rings and valves, the endo- and peri-cardial linings, and occasionally the muscular substance."

I think I have said enough to show that Dr. Sansom and I are not so much at variance as would appear from his letter, and that many of the morbid changes which he describes had already been described by me two years before his lectures were delivered. But though agreed as to the nature and extent of the changes which take place, we differ materially in our views as to their mode of production. Dr. Sansom regards the endocardial lining membrane as the primary seat of rheumatic inflammation, and "the bead-like elevations on the surface or borders of the valves but as the concomitants of an extensively diffused inflammation." But if that be so, why do they occur only on the valves? and why only on one surface of a valve? Why is it that they are always on the same surface? And why is this surface in the aortic valve always its convex, and in the mitral always its auricular? There must be a reason for this limitation of the bead-like elevations to these particular portions of the endocardial surface. The friction theory supplies an adequate reason if we only admit a prior thickening of the valve such as both Dr. Sansom and I have described. When Dr. Sansom says, "I cannot therefore accept the friction theory as accounting for rheumatic endocarditis," he conveys the impression that I do accept it as accounting for that disease. In doing so he ought to have known that he is attributing to me views which I do not hold. I have distinctly said that friction is not the cause of rheumatic endocarditis, but a mere incident (though an important one) occurring at a certain stage of that disease. It causes not the endocarditis, but only the roughening of the valvular surface, and it comes into play only after the rheumatic inflammation is established, and the fibrous texture of the valve is already swollen from cellular infiltration. This view of the matter Dr. Sansom seems to have been dimly conscious of; for he adds, in an apologetic sort of manner: . . . "though friction may well be a cause determining the aggregation of cellular elements at certain spots of the endocardium, the formation of beads and the deposit on the devitalised surfaces of the little caps of fibrine with which we are familiar." Why, Sir, that is just what I have said that friction does, exactly the *rôle* which I have attributed to it, and I am glad to find Dr. Sansom coming round, even though reluctantly, to my view of the matter. But here I must point out the grave pathological error into which Dr. Sansom has fallen, an error which is at the foundation of all the difference between us. In considering the pathology of rheumatic endocarditis it is essential that we should distinguish between the changes which take place in the endocardial lining membrane and those noted in the fibrous texture of the rings and valves. This Dr. Sansom has failed to do. He accurately enough describes the changes which take place both in the deeper fibrous structure of the valve and in its superficial endocardial covering; but he has failed to recognise that these two structures are essentially different both in nature and function, and that the bead-like elevations which are formed on the surface differ entirely in their mode of production, and in their formation, from the changes which take place in the deeper tissue of the valve. Rheumatic endocarditis consists primarily and essentially in inflammation of the fibrous texture; the endocardial lining becomes involved only secondarily, and after the valves have become swollen from cellular infiltration of their fibrous structure. "The swelling it is which makes the valves rub, and the rubbing it is which irritates and roughens the membrane which covers them externally." Both physiologically and pathologically the endocardial lining is to be regarded as pertaining to the vascular canals rather than to the heart. It has no vessels; in the absence of these it cannot be, and as a matter of fact never is, the seat of spreading inflammation. It may be irritated, and even have a hole rubbed through it, by a valvular vegetation; but the mischief is confined to the one spot, and never causes such general inflammation as would result from a similar agency acting on the vascular pericardium. If it cannot itself be the seat of primary inflammation, it is impossible for it to be a source of secondary inflammation in continuous tissues. Rheumatic inflammatory disturbance originating in fibrous or muscular structures of the heart may extend to and injure the endocardial lining, and generally does so more or less; but the process is never reversed. But the question has more than a pathological interest. In the vast majority of cases in which the heart is permanently damaged in acute rheumatism, the damage essentially consists in injury to the endocardial lining. As I said in my former letter, "The inflammation and thickening of the fibrous structure of the valve may be recovered from. What is not recovered from is the roughening of and lymphy deposit on its non-vascular endocardial covering." The former is antecedent to and causative of the latter. If the former can be prevented, or arrested early, the latter will not be developed, and the heart will not be damaged. We know that by the free administration of the salicyl compounds we can arrest and prevent rheumatic inflammation of the fibrous textures of a joint. The fibrous textures of the heart are identical in nature and function with those of the joints; like them, they are subject to rheumatic inflammation. May they not also, like them, have that inflammation arrested and prevented by the free administration of the salicyl compounds? But to get this result in the heart, we must see the case early, before the valves are so swollen that they begin to rub from premature contact. That, of course, is the difficulty; but it is as certain as such a thing can be that some such chances do occur; and I am glad to note Dr. Sansom's assurance that he intends to adopt my plan of giving, not salicylate of soda, which cannot safely be given in large doses, but salicin. Let me beg him, and those who may follow his example, to give, as I recommend, thirty grains every hour. But let me beg him and them also to bear in mind that the morbid process which the salicin can arrest and prevent is the primary rheumatic inflammation of the deeper-seated fibrous structure of the valve, and not the secondary mechanical irritation and roughening of its endocardial covering.

I am, Sir, your obedient servant,

Cadogan-place, March, 1883. T. J. MACLAGAN.

FOOT-AND-MOUTH DISEASE AND THE LYING-IN WOMAN.

To the Editor of THE LANCET.

SIR,—I have recently seen in consultation a case of fatal metria. On inquiry, I found that the patient had been supplied with milk from a farm where foot-and-mouth disease was widely prevalent. All other causes of zymotic or septic poisoning were apparently capable of being eliminated; and though there was fetid lochial discharge, a careful investigation of the uterine cavity discovered nothing, and repeated washings of its interior produced no favourable results on the temperature, so that one may set aside what Duncan terms sapræmia. The sanitary surroundings of the house were also excellent.

I should like very much to know whether any of your readers have met with or suspected foot-and-mouth disease as a cause of material blood-poisoning. There is little doubt

that everyone of the human infectious diseases may give rise to the symptoms of the so-called puerperal fever in the lying-in woman; and, reasoning by analogy, one would expect the same from the bovine affection. Yet surely in that case there should always be numerous recorded instances. The lady's friends naturally expect a positive answer to the question, May the milk of cows thus affected produce these results? I can only answer provisionally, that I think it entirely probable. In that district, several miles from Manchester, where the case occurred, there is a wide prevalence of foot-and-mouth disease, and with the greatest care on the part of the farmers there would still be a source of extreme danger to the lying-in woman there.

As the matter now stands I would certainly advise that no milk should be used by the lying-in woman in such a district, certainly none that had not been subjected to boiling.

If any corroborative cases have been published I have missed or overlooked them.

I am, Sir, yours, &c.,

J. THORBURN, M.D.,
Professor of Obstetric Medicine, Victoria University.

Manchester, March 12th, 1883.

"THE OPINION OF A 'DENTAL SURGEON.'"

To the Editor of THE LANCET.

SIR,—I feel certain that any unbiassed person who read my first letter to you, elicited by an annotation in your journal which, unintentionally, seemed to class the qualified and unqualified in my speciality together, would see that it was animated by a desire to uphold the social and scientific position of a branch of surgery as much entitled to recognition as any other when legitimately and honourably practised. It is remarkable that those who profess to reply to it impute opinions to me which I have never held, much less expressed, whilst they corroborate my statements. Their resort to personalities is regrettable, as my communication referred to measures, not persons. Such weapons proclaim a weak cause, and never strengthen argument.

My contentions were:—First, that it was unjust to the whole medical profession that wholly unqualified persons should be permitted to call themselves surgeons, or even dental surgeons. Secondly, that the Dental Registration Bill had permitted individuals of the lowest type to register themselves as dentists when such an excellent opportunity presented itself of purifying the profession by purging it of persons not carrying on their business—I will not say their profession—in a reputable manner. How do my critics answer these propositions? Simply by assenting to them! The first writer commences by a totally irrelevant attack upon the Association of Surgeons Practising Dental Surgery, which was founded for a special purpose, and which, despite his assertions, is by no means effete, and then enters upon a prolix digression on matters to which I did not even allude. I never denied that if we wait long enough—*tout vient à qui sait attendre*,—benefit may result from the Act in the far future; but I maintained that proper means had not been taken by the promotors of the Bill to prevent the registration of those who are an opprobrium to any liberal profession, mentioning the fact that shops existed over the disgusting show cases of which the owners advertised themselves as "registered dental surgeon," or even "registered surgeon and dentist." Your three correspondents unanimously accept these assertions. The first writer says: "It is undeniable that there are undesirable registered dentists"; while he cannot deny the existence of the shops which have indubitably increased threefold since that "disastrous"—I never said "monstrous"—legislation which has so degraded the present status of dental surgery. Prior to the passing of the Act, their proprietors were outside the pale of professional respectability. Now they find a legal sanction. This correspondent assumes that I am opposed to the dental licentiateship; whereas, had he read my letter, he would have seen that I expressly stated that "I did not allude to those who hold the dental licence of the College of Surgeons." And assuredly, had the Bill required unqualified practitioners to become licentiates, or had it only admitted, after careful selection, those who conducted their practices honourably to registration, there are few, certainly not myself, who would not have supported such healthy legislation. Thus, the letter I am criticising, being based upon false premises, must result in false conclusions; indeed, it is hard to imagine the object with which it was written, inasmuch as, whilst it most inexcusably misrepresents my views, it supports my contention and confirms my propositions. The author of the second letter somewhat more courteously assumes my ignorance of the provisions of the Act, but admits that the "inferior practitioners" recognised by it have no right to assume "the title of surgeon or surgeon-dentist," whilst even Mr. Cox (of whose existence, if he will pardon me for saying so, I had never heard until I read his communication of to-day) confesses that he is "as much disgusted with the admission of an indiscriminate host as the 'professor' (*sic*) himself." I very much regret that inasmuch as he is so particular in emphasising my legitimate title I should have done him the injustice of depriving him of his, especially as he is in accord with me as to the impropriety of admitting unqualified empirics to equal privileges with those who are generally or specially qualified. Finally, with regard to the sentiments which render me too sensitive, perhaps, about the social position of my speciality in surgery, I leave their interpretation to my friends who know me, not to those with whom I am not acquainted.

The suggestion that those who sympathise with me assume pre-eminence on account of their possession of a medical diploma is ridiculous as it is uncalled for, though I frankly confess that I am ashamed to be associated, even in name, with many of those whom recent legislation has permitted to register themselves as "dental surgeons." Here a medical qualification does afford protection. My opponents seem to forget the trite motto "Quot homines, tot sententiæ." In upholding my own opinions I should never be so illiberal as to quarrel with them for having theirs, however much they might be opposed to mine.

I am, Sir, your obedient servant,

S. HAMILTON CARTWRIGHT,
Professor of Dental Surgery to King's College, and Dental Surgeon to King's College Hospital.

Old Burlington-street, March 16th, 1883.

"THE FUNCTIONS OF THE SEMICIRCULAR CANALS."

To the Editor of THE LANCET.

SIR,—In your issue of February 17th last there appeared an interesting leader on the above subject, in which you drew attention to certain experiments of M. Vulpian. In a subsequent number of your journal there likewise appeared a letter from Mr. Dalby, very cogently arguing against the assumption of the semicircular canals being specially influenced in the experiments referred to, and relating certain facts commonly to be observed in aural practice. It is a frequent habit among physiological experimenters, and one introducing a very considerable element of fallacy in their conclusions, to regard animals as mere automata, and wholly to attribute to some local, it may be central, irritation or stimulus any and every peripheral manifestation, without taking sufficiently into consideration the element of intention or mind in the lower animals. It is not, however, to reiterate Mr. Dalby's objections that I presume to trespass on your valuable time and space, but to emphasise the importance you very justly attribute to the phenomenon of "sympathetic" irritation of the ear opposite to that operated upon, observed in one of M. Vulpian's experiments, and which is, I believe, not only explanatory in a measure of some pathological conditions, but also capable in some cases of therapeutic application, on the principle of what may be termed the establishment of equivibration.

Some time ago I suffered from right external otitis, for which I used a lotion of lead, glycerine, and rose-water, with the result of forming an amalgam of these substances on the right membrana tympani, and causing deafness, a feeling of capital asymmetry, or unequal sensation in the two halves of the head, the affected side being duller and heavier than the other, while a minor degree of nausea, dependent on these conditions, was likewise present. I was surprised to find that all my discomfort, except the deafness, could be removed by my plugging the sound ear with cotton-wool. This result was attributable either to the stimulation of the cutaneous nerves in the auditory canal, to the production of a certain amount of deafness in the unaffected ear, or to these conditions combined; in any case, in

my opinion, to the establishment of a greater degree of auditory and aural equivibration than existed prior to this manœuvre. It happened at the same time that I had under my care a case of well-marked auditory vertigo, coupled with attacks of severe vomiting, due to polypous occlusion of the left Eustachian tube, with well-marked depression of the corresponding membrana tympani; and which could be relieved by Eustachian catheterism, only to recur, notwithstanding the removal of as much as possible of the naso-pharyngeal polypous material. I directed this patient to plug his sound ear as firmly as possible with cotton-wool when he felt any symptoms of a vertiginous seizure, and the result, he assures me, has been to cut short or mitigate the attacks. I have likewise found it beneficial when vertigo has resulted from syringing an ear with perforated membrane, to direct the patient to stop the ear not operated upon with the finger. Moreover, the results of M. Vulpian's production of double otitis, in the conduct of the animals under these circumstances, appear to indicate a modification of the movements *en ménage*, &c., and the establishment in a measure of symmetrical equivibration, though conclusions from his results are open to fallacy, not only from the inequality of irritation in the two ears, but also from the element of mind or intelligenee in the subject. To determine the exact value (that it has some I have no doubt) therapeutically of the establishment of equivibration, a larger number of facts must, of course, be collected, and I would respectfully commend the subject to those having frequent opportunities of testing it. That the symmetrical excitation of nerves may be of more extensive application I think probable, as I have found in a case of severe trifacial neuralgia that counter-irritation of branches of the companion nerve on the opposite side of the face has relieved pain, while excitation to the same degree of the nerve on the affected side has increased it. This case was, however, one of rheumatic tic douloureux, and was only effectually cured by salicylate of soda and alkalies.

I am, Sir, your obedient servant,

Green-lanes, N., March, 1883. ALEXANDER MORISON, M.D.

"THE ST. PANCRAS VACCINATION CASE."

To the Editor of THE LANCET.

SIR,—Seeing that the pathology of the St. Pancras vaccination case is at once obscure and matter of grave importance, you will probably welcome any item of observation bearing upon the matter; and, as the practitioner who from time to time saw the child up to its death, I may be permitted to refer to one or two points in the case not otherwise fully considered, certainly not before the magistrate; and here I may express my feeling that a police-court is about the worst place possible for prosecuting a pathological inquiry. This child when brought to me was in a deep stupor. It was reported as having been ill for several days, neither had the arm been doing well. There still remained to each the outer rim of the vaccine vesicle, the areolæ being confluent. The ulcerated surfaces had an ashy-grey sodden look, such as one sees on phagedænic wounds. These became cleaner and of a healthier redness after the poulticing, and the remains of the vaccine vesicles disappeared. One item not noted is that shortly before the child's death the mother noticed it tremble all over. There seemed nothing in all this to warrant a diagnosis of the cause of death. As to the origin of the ulceration of the arm, I believe external influences had little to do with it, and for these reasons. The weather was not extremely cold, the child was not more exposed than many children attending public vaccination stations, and its home was clean and warm, if barely furnished. As to feeding, the mother gave it the breast as long as it would suck, and the feeding on corn flour and arrowroot, so much enlarged upon before the magistrate and elsewhere, was of the most nominal kind.

At the inquest I ventured to suggest, in opposition to Dr. Ballard's theory of the rubbing off of the scab, that according to my experience ulceration of the vesicles more frequently arose from unhealthy constitutional conditions, although the mothers in their ignorance are always ready to say that "the arm must have been rubbed." To my mind Charlotte Williams had this appearance. Of some importance also in this regard is the statement given in evidence by the mother of the deceased child that before leaving the workhouse "it was always asleep." Would not this suggest that meningitis had already commenced? Might not the vaccine vesicles have ulcerated in consequence of this constitutional disturbance? And might not purulent absorption afterwards induce suppuration to the already inflamed meninges? I am, Sir, yours truly,

Islington, March, 1882. J. CHALMERS.

OVARIOTOMY STATISTICS.

To the Editor of THE LANCET.

SIR,—I have just seen Mr. Spencer Wells' communication in your columns, in which he characterises as false a statement made by me that he "had gone on for twenty years operating on hundreds of cases with a mortality of twenty-five per cent." The facts are that between February, 1858, and February, 1878, Mr. Wells operated 892 times; and, according to his own tables of these cases, 220 died, giving a mortality of 24·66. This is substantially a mortality of twenty-five per cent., but there are three cases which, in my opinion, ought to be included as deaths in these tables, and they would bring the mortality of Mr. Spencer Wells' twenty-five years' practice absolutely to twenty-five per cent.

I am, Sir, yours truly,

Birmingham, March 17th, 1883. LAWSON TAIT.

ALCOHOL AND LUNG DISEASE.

To the Editor of THE LANCET.

SIR,—In your valuable and suggestive notice of the Harveian Society's "Alcohol" report, which I regret I did not see until to-day, you seem to credit the committee with the conclusion that alcohol rather antagonises lung disease. Allow me to explain that this is not so. Our inquiry showed, I think conclusively, that, excepting pneumonia and pleurisy, lung diseases carry off a smaller proportion of persons given to excess in alcohol than of the general population. But we go no further, and I have not the slightest doubt, as one of the committee, that alcohol only "protects" from death by lung disease those whom it carries off by other maladies. Section 36 of the report contains a recognition of this displacement of the mortality from the more common diseases, and in opening the discussion upon the report at the Society I pointed out more fully that the heavy demands of phthisis, bronchitis, &c., amounting to about 35 per cent. of the whole adult mortality, could not be satisfied after alcohol had exacted its tax in the shape of liver, kidney, and brain diseases. The positive effect of alcohol in producing or predisposing to lung disease, as to which I have personally no doubt, can only be brought out by other methods of inquiry, which did not come within the scheme of the committee.

I am, Sir, yours faithfully,

Greville-road, N.W., March 8th, 1883. T. MORTON, M.D.

SCOTTISH NOTES.

(*From our own Correspondent.*)

EXTRA LECTURES AT ABERDEEN UNIVERSITY.

THE lectureships in connexion with Aberdeen University, of which I recently wrote, have now been arranged so far as the teaching of lunacy, public health, and ear and throat affections are concerned. Dr. Reid, joint-superintendent at Elmshill Asylum, Dr. Simpson, medical officer of health, and Dr. M. Booth, dispensary physician, are the lecturers chosen. These gentlemen have all access to material for practical instruction; their respective subjects have been rather crushed out of the curriculum lately, and the appointments will be looked upon as another step towards the full equipment of the university for its work.

PATHOLOGY AT ABERDEEN.

It is very satisfactory to state that, by the kindly suggestions of Dr. Struthers and the mutual consideration of the parties more intimately concerned, an agreement has been arrived at on what has interested many in the North as the Pathology Question at Aberdeen. It will be remembered that the Senatus of the university and Professor Hamilton, anxious for the fullest efficiency of the pathology

chair, sought the control of material at the infirmary for the teaching of the subject. But Dr. Rodger has for many years fully utilised his opportunities of teaching a subject hitherto but little valued by the Senatus of Aberdeen, and, as the recognised pathologist, could only offer his fullest assistance to the professor. The settlement now effected leaves Dr. Rodger in full possession, while affording Professor Hamilton friendly aid. The minute adopted by the Quarterly Court last week was drawn by Dr. Rodger, and is to the following effect: "That, having considered the report of the Committee of Management of Oct. 18th last in regard to the teaching of pathology laid before the Quarterly Court of Dec. 11th, and postponed till next Quarterly Court, the court, without expressing any opinion in regard to the motion contained in the said report, resolves to grant permission to the pathologist to appoint at his discretion the professor of pathological anatomy in the university to act occasionally as his substitute, and thus afford him opportunities of making post-mortem examinations and of conducting pathological teaching in the hospital, and in other respects that they should mutually afford each other every facility for pathological instruction and investigation."

ABERDEEN ROYAL INFIRMARY.

The same meeting which considered the pathology question had also to give serious heed to the financial position of the infirmary. The year's deficit amounts to £555, and, excepting the result of Hospital Sunday, which gives £1752, all the items of income show an unsatisfactory condition. A feature noted in Aberdeen, as it is in the other large towns in Scotland, is the liberality of the Established Church; the niggardly donations of Dissenters contrasting strangely in this matter with their generosity in purely church affairs. There is now a debt of £3300 hanging over the charity, and this condition of affairs is so serious that a special remit hat been made to a committee to devise measures for permanens relief. If a few of the subscribers take the matter up in the hearty style of Mr. Edmond, the debt will soon be wiped off, and the way may then be clear for the important additions and improvements in the building so much desiderated, and about which Drs. Fraser and Stephenson have so actively interested themselves. Regarding the appointment of a fourth physician, there is evidently a difficulty which does not appear on the surface, and the question has again been postponed.

THE LATE DR. JOHN L. PATERSON, BAHIA.

News has recently reached this country of the death of Dr. Paterson, who for many years has made his home in Brazil, and evidently represented British medicine with much honour to himself and usefulness to the people of Bahia and the district. A graduate in Arts and Medicine of Aberdeen, and a member of the Royal College of Surgeons of England of forty years' standing, the deceased has spent his whole professional life in Pernambuco and Bahia, visiting Scotland but twice during that period to arrange for the education of his family. Dr. Paterson was much esteemed by the people of his adopted country, occupied a distinguished social position, and had the happiness of instituting many reforms of great advantage to the public health. After decoration by his Sovereign, and an unblemished career, Dr. Paterson died suddenly at the bedside of a patient, and his remains were honoured with a public funeral. The church, draped in black, was crowded with mourners, who wore their garb of sorrow for three days. Such a funeral procession had not before been seen in Bahia; and, according to a beautiful local custom, most of the attendants carried wreaths of flowers, which, when thrown into the grave, completely filled it up. A public monument has already been arranged for.

THE LIFE HISTORY OF THE SALMON.

Drawing from the results of a long-continued study, Professor M'Intosh delivered, on Saturday last, an interesting lecture on the above subject, before the Students' Classical Society of the St. Andrews University. The various stages of development, from the ova to the well-grown fish, were illustrated by many specimens. Dr. M'Intosh began by showing that it is only since post-pliocene times that we meet with fishes of this class; that geographically the salmon is distributed over temperate Europe as far southward as the Bay of Biscay, and a similar species occurs in the Arctic seas. Detailing the anatomical structure of the salmon the strong muscular system was specially referred to, this provision allowing it to overcome cataracts and cascades on its way to the chosen spawning ground. The yearly cycle—during summer inhabiting the sea, in autumn taking to the rivers for spawning, in winter occupying the pure fresh streams, and in spring again reaching the ocean—was shown in certain cases to be departed from. A full account of the artificial propagation of the salmon for many years, successfully carried on in the Tay, was given, and the careful study by the professor at the ponds gave opportunity for an interesting description of a fascinating scientific subject. Were this lecture somewhat elaborated and published in separate form, it would form a valuable and easily accessible digest of our present information on the subject.

PARIS.

(From our Paris Correspondent.)

PROFESSOR PAUL BERT is still persevering in his researches on the inherent properties of oxygenated water, or the peroxide of hydrogen, and on its effects on the animal organism. It will be recollected that in May last a series of observations were laid before the Academy of Sciences by the learned biologist, who, in conjunction with M. Régnard, illustrated the anti-fermentative action of this agent, and concluded that it might prove useful as an antiseptic in surgery. These prognostications have been confirmed, and at the last meeting of the Biological Society Professor Paul Bert suggested that, from its known anti-fermentative and anti-parasitic properties, the use of oxygenated water may still be considerably extended and substituted with advantage for carbolic acid, alcohol, salicylic acid, &c., in all cases where the latter are indicated—viz., unhealthy wounds, deep abscesses, fistulæ, and certain cysts known to be of parasitic origin. It has already been employed with success in the treatment of certain contagious diseases, such as gonorrhœal ophthalmia, purulent cystitis, &c., and Dr. Landolt, a young and rising oculist, has adopted it in his ophthalmic practice, almost to the entire exclusion of the antiseptic remedies in repute. Referring to these considerations, M. Paul Bert concluded that oxygenated water may be still more extensively employed in medicine, and thought there were many cases to which the remedy was applicable. For instance, in the chronic diarrhœa of tropical climates, in which the intestines are infested with microscopic animalcules in much greater numbers than in the normal state, and the presence of which has a marked influence on the progress of the disease. Here he would administer the water in the form of enemata, so as to act directly on the parasites. He recommended it also in chronic ulcer of the stomach, and by a parity of reasoning he considered that the application of oxygenated water was clearly indicated in pulmonary phthisis, as it was now known beyond a doubt that that affection was contagious, and that the contagion was due to a microbe. He would employ the remedy in the form of spray, and in order to prevent any unpleasant effects in the mouth, he would direct the instrument well to the back of the throat. But it is here, I may observe, that Paul Bert proves that he is not a clinician; for it may be asked how the remedy administered in this way is to reach the microbes in the lungs, and this is the error that most experimenters fall into—viz., they think they can deal with the animal organism and produce the same effects as those obtained in a glass jar in their laboratory.

The so-called dosimetric system of medicine has received a rather severe blow by the exposure of its fallacies by what the public are pleased to call allopaths. At a recent meeting of the Société de Thérapeutique Dr. Dujardin-Beaumetz read an observation from the "Répertoire de Médecine Dosimétrique," in which the author endeavoured to demonstrate the "tolerance" of the economy for alkaloids in subacute and acute affections. According to this author, Dr. Duchêne, who was called to attend a female patient suffering from generalised subacute rheumatism, prescribed, in order to test the susceptibility of his patient with regard to alkaloids, five tubes of granules of aconitia, five of veratria, and five of digitaline, and recommended the patient to take eight granules of each tube in the twenty-four hours. The patient swallowed, in forty-eight hours, the contents of fifteen tubes (each tube containing twenty granules, each of half a milligramme, or the $\frac{1}{100}$th part of a grain)—that is to say, 100 granules of aconitia, 100 of veratria, and 100 of

digitaline; but the patient, far from being incommoded by the granules, was completely cured. From this Dr. Dujardin-Beaumetz concluded either that the patient did not take the number of granules reported, or that the latter did not contain the active principles named, as it is known that when more than eight granules of aconitia are swallowed in the twenty-four hours toxic effects are produced.

Dr. Laborde read a paper before the Biological Society in the name of M. Vigier on the physiological action and the elimination of the borate of soda. Up till now chemists have experienced great difficulty in detecting the presence of this salt in the products of excretion, even when ingested in large quantities. M. Vigier, however, has been able with the aid of the spectroscope to discover it in the saliva as early as two hours after its absorption. He found the salt in the saliva even twenty-four hours after it was taken. This fact is of some importance as regards the therapeutic applications of this salt. He also found that as much as four or five grammes could with impunity be injected into the veins of an animal.

Paris, March 13th, 1883.

Obituary.

P. F. L. N. DELARUE, M.R.C.S., L.S.A.

WE regret to record the death of Mr. P. F. Delarue, which occurred on the 13th inst. at his residence at Devonport, after an illness lasting only a few days. Mr. Delarue held the offices of Public Vaccinator and of Surgeon to the Borough Police Force; he also obtained the permanent appointment of House-Surgeon to the Union, being relieved from the necessity of periodical election. In addition to these appointments, Mr. Delarue enjoyed a large private practice, and his death will be regretted by a large circle of friends, whose esteem he gained by his professional skill and upright character. The immediate cause of Mr. Delarue's death was carbuncle, which, in the early part of the week preceding his death, had compelled him to abstain from his professional duties, although a fatal termination of his illness was not anticipated until the 11th inst., when it was seen that his constitution was greatly affected by the wasting nature of the disease.

MEDICAL NOTES IN PARLIAMENT.

IN the House of Commons, on Friday, the 16th inst., Mr. Corbet asked the Chief Secretary for Ireland whether the Local Government Board exercised their powers under the Public Health Act with regard to the recent cases of malignant fever in Dublin, when a wake was held over the body of a man named Roe for two days and nights. Mr. Trevelyan replied that there was no evidence to show that any cases of infection were attributable to the wake. The report of a medical inspector of the Local Government Board showed that the propagation of the fever was mainly caused by the concealment of the disease in the families first attacked. The special powers given by section 149 of the Public Health Act were not applicable in this instance.

In reply to a further question on Monday, Mr. Trevelyan said he would consult with the Local Government Board as to whether further inquiry was needed with regard to this matter.

Mr. Chamberlain stated, in reply to a question by Mr. Dillwyn, that the Board of Trade had issued circulars to shipowners with regard to the better prevention of scurvy. The Board recommended that fresh meat and vegetables should be served out wherever practicable, but they had no authority to enforce that recommendation. In any future proposal for amendment of the Merchant Shipping Act this point would receive attention. The use of lime or lemon juice was not alone sufficient as a preservative against scurvy.

Amongst other notices on the paper, for which no days have been fixed, is one by Mr. Broadhurst, to call attention to the want of dwelling accommodation for the working classes in large towns.

The order for the second reading of the Infectious Diseases Notification Bill now stands for Tuesday, April 17th, and against it there are notices of opposition in the names of Mr. Hopwood and Mr. Severne. The Private Lunatic Asylums (Ireland) Bill is down for Wednesday, June 6th.

On Wednesday, Dr. Cameron, on the motion for the adjournment over the Easter holidays, called attention to the distress in the Highlands and Islands of Scotland, and stated that one death had occurred from starvation.

The Lord Advocate has given notice of a Bill for the better administration and endowment of the universities of Scotland.

Medical News.

COLLEGE OF PHYSICIANS IN IRELAND. — At the March examinations the following candidates obtained the licences in Medicine and Midwifery of the College:—

MEDICINE. — George Lowbridge Baker, Thomas David Collis Barry, John William Gormley, Timothy Howard, William John Vivian Rowe.

MIDWIFERY. — William Robert Hamilton, John Colclough Hoey, William M'Gee, George Lowbridge Baker, John William Gormley, Timothy Howard, William John Vivian Rowe.

The following candidates were admitted Members:—

Richard Marlay Blake. | Andrew O'Kelly Nolan.
Philip C. Smyly.

APOTHECARIES' HALL. — The following gentlemen passed the examination in the Science and Practice of Medicine, and received certificates to practise, on March 15th:—

Smith, John Charles, Gillingham-street, Pimlico.
Williamson, Herbert Holdrich, Mildmay-park.

THE Library of the Royal Medical and Chirurgical Society will be closed from Good Friday to Easter Monday (inclusive).

SANITARY INSTITUTE OF GREAT BRITAIN. — The Autumnal Congress of this Institute will be held this year in Glasgow from September 26th to 29th. The exhibition of sanitary apparatus and appliances in connexion with the Congress will remain open until Oct. 20th.

EXTRAORDINARY BIRTH.—Mr. William J. Sumner, assistant to Mr. Charles Westbrook, of Sheffield, on the 19th inst. successfully delivered the wife of a mechanic, living at Hillsbro', of four children—three girls and one boy—prematurely, stillborn. The mother is doing well.

A PERFORMANCE of Gounod's Redemption was given last week at Manchester in aid of the Royal Infirmary. The interest which the public of Manchester take in music, and the desire it has of supporting the infirmary, may be judged when it is stated that as a result of this performance some £500 will probably be added to the funds of the institution.

COOMBE LYING-IN HOSPITAL, DUBLIN.—This valuable institution labours under a debt of some £1500, but energetic steps are being taken by the friends of the charity to relieve it. Besides a dramatic performance in the Gaiety Theatre in aid of the funds, it is also proposed to hold a bazaar during the first week in May, when a considerable amount may be expected to be obtained for the hospital.

PRESENTATION.—At Llandrindod Wells, on Saturday last, a deputation of friends and patients waited upon W. Bowen Davies, Esq., L.R.C.P. Lond., the Honorary Medical Director of the Llandrindod Wells Convalescent Home and Cottage Hospital, and presented him with a purse of 125 guineas, as a token of esteem and in acknowledgment of work done, and the public spirit he has always shown in furthering the interests and welfare of this popular watering-place.

UNIVERSITY OF DURHAM MEDICAL SOCIETY.—The soirée of this Society, held at the Wood Memorial Hall and adjoining rooms of the College of Physical Science on the evening of the 14th inst., was a great success. The various rooms, which were elegantly decorated, were scarcely large enough to hold the numbers assembled. Received by the President of the Society, Professor Philipson, and the Committee, the guests proceeded at once into the Hall, wherein was raised at one end a platform for the singers, and at the other was neatly arranged a choice selection of curiosities, works of art, samples of the industrial productions of the district, photographs, &c. One of the most interesting features of the concert was the performance of Romberg's Kindersymphonie, in which music is collectively or individually elicited from a series of instruments.

Medical Appointments.

Intimations for this column must be sent DIRECT *to the Office of* THE LANCET *before 9 o'clock on Thursday Morning at the latest.*

ANDERSON, ROBERT, M.D., L.R.C.S.Ed., has been appointed Medical Officer to the Cramlington District of the Tynemouth Union, vice Davidson.

BERRY, J. BRIGHT, M.B., M.Ch.Ed., has been appointed Public Vaccinator to the South Keighley District of the Keighley Union, vice Milligan, resigned.

BOND, WM. JAS., M.B.Glas., L.R.C.S.Ed., has been reappointed Medical Officer to the No. 7 District of the Aylesbury Union.

CURETON, EDWARD, L.R.C.P.Ed., L.F.P.S.Glas., L.S.A.Lond., has been appointed Medical Officer to the Workhouse of the Atcham Union, vice Whitwell, resigned.

DE WOLFE, GEO. H. HORSFALL, M.B., M.Ch.Ed., has been appointed Medical Officer to the Sixth District of the Eccleshall Bierlow Union.

GALABIN, ALFRED LEWIS, M.D.Cantab., F.R.C.P.Lond., has been appointed Obstetric Physician to Guy's Hospital, vice Hicks, resigned.

HOOPER, CHARLES, M.R.C.S., L.S.A.Lond., has been reappointed Medical Officer of Health to the Aylesbury Urban Sanitary District.

HORROCKS, PETER, M.D.Lond., M.R.C.P., has been appointed Assistant Obstetric Physician to Guy's Hospital, vice Galabin, resigned.

LEE, HERBERT GROVE, M.D. St. And., M.R.C.S., L.S.A.Lond., has been reappointed Medical Officer to the No. 6 District of the Aylesbury Union.

MURRAY, H. MONTAGUE, M.B.Lond., has been appointed Medical Registrar to the Charing-cross Hospital.

OGLE, C. J., M.R.C.S., &c., has been appointed Administrator of Anæsthetics to the Metropolitan Free Hospital.

ORFORD, JOHN, M.R.C.S., L.R.C.P.Lond., L.S.A.Lond., has been appointed Senior House-Surgeon to the Metropolitan Free Hospital, vice W. Alpin, M.R.C.S., L.R.C.P., resigned on account of ill health.

POPE, EDWARD, M.R.C.S., L.S.A.Lond., has been reappointed Medical Officer to the No. 2 District of the Aylesbury Union.

POWER, C. P., M.R.C.S., L.R.C.P.Lond., M.B.Camb., has been appointed Assistant House-Surgeon to the Metropolitan Free Hospital, vice S. Butterworth, M.R.C.S., M.R.C.P.Ed., whose term of office has expired.

ROBERTS, WILLIAM, M.D.Lond., F.R.C.P.Lond., has been appointed Honorary Consulting Physician to the Manchester Royal Infirmary.

STEVENS, LEWIS WILLIAM, M.R.C.S., L.R.C.P.Ed., has been appointed District Surgeon of Robertson, vice Dr. Hauf, resigned.

STRICKLAND, FRED. GEORGE, L.R.C.P.Ed., L.F.P.S.Glas., has been reappointed Medical Officer to the South Owram and part of the North Owram District of the Halifax Union.

TISDALL, JOHN JOS., L.R.C.P., L.R.C.S.Ed., has been appointed Assistant Medical Officer to the Walton Workhouse of the West Derby Union, vice Ferguson, resigned.

TORRENS, J. LUSK, L.R.C.P., L.R.C.S.Ed., has been appointed Medical Officer to the Connor Dispensary of the Antrim Union.

Births, Marriages, and Deaths.

BIRTHS.

DAY.—On the 20th ult., at Pernambuco, Brazils, the wife of Wm. A. Day, M.R.C.S., of a son.

COMYN.—On the 15th inst., at Yorke-crescent, Woolwich, the wife of Dr. J. Sansfield Comyn, Deputy Surgeon-General, of a daughter.

HOAR.—On the 13th inst., at Maidstone, the wife of Charles E. Hoar, M.D., of a daughter.

SAVAGE.—On the 16th inst., the wife of Dr. Geo. H. Savage, of Bethlem Royal Hospital, of a son.

SEYMOUR.—On the 16th inst., at 76, Stamford-street, S.E., the wife of John Rusby Seymour, L.R.C.P., L.R.C.S., L.S.A.Lond., of a son.

THOMSON.—On the 16th inst., at Frome, Somerset, the wife of G. Crawford Thomson, M.B., M.R.C.S., of a daughter.

NOAD.—On the 17th inst., at Lower Norwood, S.E., the wife of Hy. Carden Noad, L.R.C.P.Lond., M.R.C.S., of a daughter.

MARRIAGES.

MOORE—POLLEY.—On the 14th inst., at the Catholic Apostolic Church, Catherine-street, Glasgow, Wm. Moore, M.B., C.M., of Ayr, to Elizabeth, fourth daughter of the late James Polley, Esq., of Colchester, Essex.

STIRLING—FERGUS.—On the 14th inst., at Park Church, Highbury, Charles Stirling, M.B., C.M., of Grange-road, Bermondsey, to Mary, youngest daughter of the late Mr. Walter Fergus, of Blackdales, Largs.

DEATHS.

ARNOTT.—On the 4th inst., at St. Stephen's-crescent, Westbourne-park, W., James Arnott, M.D., formerly of St. Helena, aged 86.

BUNTINE.—On the 10th inst., suddenly, at Newport, Mon., Robert Buntine, L.F.P.S.Glas.

HENDERSON.—On the 13th inst., at the residence of his son-in-law, F. Dagon, of Lewisham High-road, London, S.E., Thos. Henderson, Surgeon, late of Edinburgh, aged 77.

HOLMAN.—On the 14th inst., at Caversham-road, Kentish-town, Andrew Holman, L.S.A.Lond., late of John-street, America-square, aged 86.

N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

METEOROLOGICAL READINGS.

(Taken daily at 5.30 a.m. by Stewart's Instruments.)

THE LANCET OFFICE, March 21st, 1883.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Max. Temp. Shade.	Min. Temp.	Rain fall.	Remarks at 5.30 A.M.
Mar. 16	29·32	W.	31	..	..	43	22	..	Hazy
,, 17	29·56	W.	39	37	..	48	27	..	Cloudy
,, 18	29·59	S.W.	38	35	..	43	29	·19	Cloudy
,, 19	29·79	N.E.	38	36	..	44	33	..	Overcast
,, 20	29·63	E.	40	39	..	41	35	·23	Overcast
,, 21	29·65	E.	40	38	..	40	35	..	Overcast

Medical Diary for the ensuing Week.

Monday, March 26.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations 10½ A.M. each day, and at the same hour.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.; on Tuesday, 9 A.M.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.

Tuesday, March 27.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8.30 P.M. Mr. Herbert Page, "On Subperiosteal Hæmorrhage, probably Scorbutic, of Three Long Bones in a Rickety Infant."—Dr. T. Barlow, "On Cases of so-called Acute Rickets in Children (Combination of Rickets and Scurvy).

Wednesday, March 28.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.—Ophthalmic Operations on Tuesdays and Thursdays, at 1.30 P.M.

ST. MARY'S HOSPITAL.—Operations, 1½ P.M.

ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.

LONDON HOSPITAL.—Operations, 2 P.M., and on Thursday and Saturday at the same hour.

GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.—Skin Department: 1.45 P.M., and on Saturday at 9.15 A.M.

HUNTERIAN SOCIETY.—8.0 P.M. Mr. Rivington, "On a Case of Removal of Loose Cartilage from the Knee-joint."—Mr. Charters J. Symonds, "On the Use of Martin's Bandage in the Treatment of Synovitis, and a Case of peculiar Eruption on Sole of Foot, probably due to Congenital Syphilis."—Dr. Port, "On a Case of Mediastinal Tumour."

Thursday, March 29.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—1½ P.M. Surgical Consultations.

CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.

NORTH-WEST LONDON HOSPITAL.—Operations, 2½ P.M.

Friday, March 30.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2 P.M.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.

CLINICAL SOCIETY OF LONDON.—Mr. R. W. Parker, "On a Case of Contused Wound of the Thigh and Leg; Gangrene of the Limb; Death."—Mr. Spencer Watson, "On a Case of Tetanus."—Mr. Howard Marsh, "On a Case of Tetanus following Laceration of the Toes, and persisting forty days; Recovery after Syme's Amputation."—Mr. Barwell, "On the Removal of large portions of the Upper Lip, without Deformity of the Face."—Mr. H. Marsh will exhibit a Case of Osteitis Deformans.

Saturday, March 31.

KING'S COLLEGE HOSPITAL.—Operations, 1 P.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.

Notes, Short Comments, and Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editor."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for publication or private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe, or recommend practitioners.

Local papers containing reports or news-paragraphs should be marked.

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

PHARMACEUTICAL PREPARATIONS OF CINCHONA.

IN a paper on "Liquid Extract of Cinchona," read before the Pharmaceutical Society of Great Britain, on the 7th inst., Dr. B. H. Paul communicated some data illustrating the results obtained when this preparation is made by the British Pharmacopœia process which may surprise those practitioners who imagine that this liquid extract fairly represents all the medicinal constituents of cinchona bark. Dr. Paul's attention was directed to the subject through observing the small proportion of quinine present in a sample analysed, and upon extending his examination to other samples of liquid extract of cinchona obtained from various sources he found that they all agreed in containing only very small proportions of quinine, varying from mere traces up to two grains per fluid ounce, whereas a liquid extract representing all the quinine from a yellow bark coming up to the Pharmacopœia standard would contain about thirty-five grains per fluid ounce. Experiments were then made to ascertain whether this deficiency was referable to the quality of the bark used, yellow bark containing anything like the quantity of quinine indicated in the Pharmacopœia being now seldom met with, or to defects in the official process of manufacture. For this purpose an ordinary sample of flat Calisaya bark and a sample of bark from the Government plantations in India were operated upon. The Calisaya bark, upon analysis, was found to contain only 5·5 grains of quinine to the pound, but the total alkaloids amounted to 148·25 grains to the pound, or just over the Pharmacopœia standard for "nearly pure quinine." A liquid extract of this bark, if made by a process that secured complete exhaustion, should therefore contain 37 grains of alkaloid in the fluid ounce, but the official process gave a liquid extract which contained only 8·6 grains. The Indian bark contained 397 grains of total alkaloid, of which 135 grains consisted of quinine, or nearly the amount required by the Pharmacopœia. If fully exhausted, therefore, this bark would have yielded a liquid extract containing 35·75 grains of quinine and 99·25 grains of total alkaloids in the fluid ounce. But a preparation made by the official process contained only 4·39 grains of quinine per fluid ounce and 14·32 grains of total alkaloids, or about one-seventh of the quantity present in the bark. In both cases, it is true, the preparation contained a large amount of quinic and cinchotannic acids; but Dr. Paul considers that the results show conclusively that if quinine and the other alkaloids of cinchona bark are to be considered as constituting an essential factor of the medicinal properties of the drug, the process ordered by the British Pharmacopœia for the preparation of liquid extract fails in a very important particular to furnish a product that can be relied upon as fully representing those properties.

Mr. H. W. Pilgrim.—The answer depends entirely on the nature of the contract between the partners. If the junior partner buys and pays on the understanding that the whole is to revert to him on the death of the senior, this should be clearly stated in the deed; otherwise the widow is presumably entitled to sell her husband's interest in the practice.

"RELIGION *v.* MERIT."

To the Editor of THE LANCET.

SIR,—The scene which is described as having taken place at the election for a medical officer for the Ballinameen Dispensary District in the county of Roscommon is no uncommon event now in Ireland. Before I was elected to my former appointment, and also before the election for the appointment which I now hold, I had the honour of being denounced from the altar by the Roman Catholic clergymen simply on the ground that I am a Protestant.—I am, Sir, yours truly,

March 14th, 1883. AN I SH DISPENSARY MEDICAL OFFICE

SCHOLASTIC HYGIENE.

IN a detailed treatise lately published in the *Gesundheit*, Dr. Rudolph Leszner, of Eisenstadt, Hungary, has grouped together a variety of facts and recommendations bearing on the above subject. He remarks that the importance of the question at issue has hardly been appreciated as it should have been in the general attention paid of late years to sanitary topics. He considers that more stringent precautionary measures are required for attaining a certain hygienic standard in the case of schools than are necessary for private houses, the overcrowding which exists in the more densely populated quarters of cities being to a certain extent reproduced in schools even under normally favourable circumstances. He deals at some length with the influences which produce short-sightedness in pupils, and with the hygienic requirements that should be kept in view in the building, heating, and ventilation of structures used for educational purposes.

Agnostic.—A full bibliography is given by Mr. V. Horsley in his paper in the lately issued Report of the Medical Officer to the Local Government Board. A good summary of known facts concerning pathogenic bacteria will be found in Ziegler's General Pathological Anatomy (Macmillan).

Mr. Bros.—A notice of the Home appeared in our columns last week.

"THE DISPOSAL OF CITY WAIFS."

To the Editor of THE LANCET.

SIR,—Will you allow me, with reference to your article on the above, to remark that it would perhaps be well for medical men to make full inquiries before they directed their own charity, or that of others, into the channel which you have indicated.

The following facts in connexion with this subject are worthy of notice. Of the 10,000 children said to have been sent to Canada and elsewhere, only a small fraction can be now accounted for. The Canadian authorities cannot show that a third of this number have landed in Canada, and I have reason to believe that they have only recently become alive to the gravity of the question, and have decided to institute a thorough supervision of the whole system of child exportation.

The Poor-law Board allows no children under thirteen to be sent abroad by local guardians; but a system of uninspected child emigration prevails, by which children of two years old and upwards are sent to Canada and the United States by the aid of private subscriptions. Now, if it is admitted that a thorough supervision is necessary in the case of children acknowledged to be of an age to work, how much more is it necessary to look after these poor infants, who are not of an age to work, and who are at the mercy of those who take charge of them?

When we consider the class of men and women to which many of the Canadian farmers belong, we cannot be surprised at the accounts of hardship and misery that occasionally find their way home. The so-called homes in Canada and the United States have made, it seems, no provision for receiving back any children who may be unhappily placed out, and the result is in too many cases disastrous, and especially to the girls.

Many kind and benevolent ladies are engaged in hunting up these waifs and strays from our lanes and alleys, and by promises of happy homes in the far West—promises thoroughly sincere, no doubt—they induce the wretched and poverty-stricken mothers to hand over their children to the homes in this country. Here they are in many cases compelled to sign an agreement by which they resign all right to the future disposal of their offspring. These miserable women, however depraved they may be, are still mothers, and have more affection for their children than many benevolent people are disposed to believe; and although this transaction may not be legally binding, they evidently think it so, and often repent too late of their bad bargain.

Everyone will admit that if children are sent abroad at all, they ought to be well looked after, and kept in view until they become old enough to take care of themselves. My own feeling is, that no child should be sent abroad under thirteen years of age, and I would earnestly entreat THE LANCET, or some one with the power and authority to do so, to inquire into this matter, lest we be found, under the delusive name of charity, to be encouraging in our midst one of the worst forms of slavery that ever existed. I am, Sir, yours, &c.,

Edinburgh, March 17th, 1883. MEDICUS.

"CONSULTING SURGEONS AND MEDICAL PRACTICE."

To the Editor of THE LANCET.

SIR,—In THE LANCET of the 24th ult., a letter appears with the above heading from "A Physician." The following is the statement of a patient now under my care. Some few weeks ago, she says, she went to a London physician of some eminence and complained of her nose, being unable to breathe through her left nostril. This good gentleman, she informs me, saw her, prescribed for her, took his fee with exemplary fortitude, and diagnosed a swollen state of the mucous membrane, also informing her that he at first thought she might have a polypus, but it was not so. She came down here under my care, and I *removed several polypi*. Your correspondent asks for a justification of the surgeon's conduct. Sauce for the goose is sauce for the gander. If physicians undertake surgical cases, why should surgeons not undertake medical?

I await an answer to this conundrum, and remain, Sir, yours obediently, O. R. T.

St. Leonards-on-Sea, March 8th, 1883.

FEMALE DOCTORS IN GERMANY.

ACCORDING to the Berlin papers, Madame Schöne (a lady who had taken medical degrees in America) has been summoned before the criminal tribunal for a contravention of the law. It appears that in the Directory she was styled "doctor," and on the grounds that this calling was not contemplated as being exercised by a lady, the Government prosecutor claimed the imposition of a fine. The court, however, decided that this fact in itself being known to everybody, no one was deceived by the circumstance of her being styled doctor, and on these grounds acquitted her. On a further appeal it was proved by Madame Schöne that she called herself "doctoress" on her door-plate, and was thus styled in a different part of the Directory from that previously alluded to. Her acquittal was therefore confirmed by a superior tribunal.

Volvans.—1. For the first examination, Quain's Anatomy and Foster's Physiology; for the second examination, Erichsen's Surgery, Billroth's Surgical Pathology, Holden's Landmarks, Bell's Operative Surgery.—2. About two years, including six months' dissection.

THE DISTRIBUTION OF EGYPTIAN WAR GRATUITY TO NAVAL MEDICAL OFFICERS.

To the Editor of THE LANCET.

SIR,—I beg to call your attention to the classification recently adopted in distributing gratuities to the naval medical officers for services in Egypt. I do so in the hope of obtaining your powerful advocacy for the redress of what I deem an injustice. Relative rank is generally supposed to carry with it all advantages, except name or actual command, and departmental officers in the army were given gratuities in accordance with their relative or honorary rank; thus medical, commissariat, ordinance, and other officers ranking with captains, obtained the gratuity due to captains, and so on through the various ranks.

In the navy, however, surgeons, who rank with lieutenants, were only given the same gratuity as boatswains, gunners, and carpenters. For receiving gratuities, inspectors-general of hospitals, with the relative rank of rear admirals, are classed below captains, commanders, lieutenants commanding gunboats, or navigating lieutenants commanding storeships; fleet-surgeons, with relative rank of commanders, get less than a third of the share of those officers; and staff-surgeons are also classed with those of lower rank than themselves.

Considering the acknowledged value of medical officers in war, and the many risks and hardships, added to those purely professional, which they share with their combatant brethren, it is strange that they should suffer in the distribution of prize-money and pecuniary rewards. The chaplain, man of peace though he be, gets a more liberal slice of the sinews of war than the surgeon, who is as necessary as a combatant officer in warfare when once begun.

The classification adopted rests on an Order in Council of May 16th, 1871, regulating the distribution of prize-money, before medical officers held their present relative rank. I feel that the matter only wants representation to the Admiralty to prevent the recurrence of what is manifestly an anachronism.—I am, Sir, your obedient servant,

March 18th, 1883. SCALPEL.

Scotland.—Doubtless students who have been registered before the Bill passes will be fully considered. Answers to the second and third questions would be mere guesses, so we do not give them.

Mr. P. E. Hill.—We can only advise our correspondent in general terms to proceed on the ordinary methods of dissection.

R. M.—"Suspenders."

LAWS OF THE WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

To the Editor of THE LANCET.

SIR,—Part of the second law of the above Society enacts that no one "carrying on a private dispensary for his own personal advantage shall be eligible for election."

As this is the only Society to my knowledge that excludes, by its professional West-endism, some of the poorer members of the profession, who try honestly to practise and get a practice by the friendly aid of a dispensary, simply because slender means prevent the choice of patiently waiting for the development of one, and who are yet above always remaining assistants, I think it but right to draw the attention of the profession to this.

There are some in the London W. and S.W. districts who either apply the higher sounding name of surgery to their dispensaries, or there are others who have surgeries attached to private houses where they carry on dispensary principles. Besides these, some have clubs varying from 8d. a month for a whole family, and others who carry on practice for "personal advantage" by assuming titles—e.g., the L.S.A. London, who calls himself the surgeon-accoucheur—and yet these do not offend against part of this second law. I am, Sir, yours, &c.,

London, S.W., March 17th, 1883. ICONOCLAST.

INFANTS' ABDOMINAL BANDS.

To the Editor of THE LANCET.

SIR,—I have had several letters asking where the bands I recommended last week may be procured. Messrs. Arnold and Sons, 35 and 36, West Smithfield, London, can supply them.

I am, Sir, yours truly,

Elm House, Hawick, N.B., JAMES R. HAMILTON, M.D. &c.

March 20th, 1883.

MEDICAL TESTIMONIALS IN HAIRDRESSERS' SHOPS.

Perplexed.—A remarkable set of testimonials, signed by Dr. Grainger Stewart, Dr. Edward Waters, &c., is before us in favour of Dr. Duigan, of Gainsborough, who has treated them so badly as to distribute them, it is said, and to have one of them hung up in a hairdresser's shop! Our informant should send a copy to the writers.

Anti-Typhus.—The London and Provincial Sanitary Company, 22, White hall-place, S.W.

"A CHLORAL PATIENT."

To the Editor of THE LANCET.

SIR,—"Spes," in his letter in THE LANCET of March 10th, asks for suggestions in reference to a chloral patient under his care. His case reminds me of one somewhat analogous to his own. A patient, single, aged thirty-six years, has been under my treatment for persistent ovaritis, and frequent attacks of erysipelas of the head and face, for nearly three years. I prescribed bromide of potassium and chloral hydrate (fifteen grains of the former and one-drachm doses of the latter drug) at bed-time, to procure sleep, with good results. At the same time, I gave specific instructions that no more than the one dose be taken on retiring for the night. After a time, and when the patient was cured of these ailments, I found that she still took this recipe too frequently; but invariably she denied it. We had the supply stopped from the local chemists; but she got it from a distance. One day at visit she was so thoroughly "chloralised" that I determined to take decided steps when she was out of the chloral. These were:—(1) That I came to the conclusion she was, and had been, taking chloral in excess for some time, and was thereby ruining her health, and breaking the hearts of her friends. (2) That she must leave off this sinful habit, or she would have to be put under restraint, and I would not be responsible for her future conduct. This plain speaking has had the desired effect, as my patient is now in excellent health, and has no craving for her former pet soporific, but, on the contrary, says she will never take chloral, &c., again. I believe prompt measures and a decided stand go far to cure cases of the above nature.—I am, Sir, yours &c.,

Near Edinburgh, 13th March, 1883. NIL DESPERANDUM.

Dr. Holstein.—Thanks. We are, however, unable to entertain the proposal at present.

INFANTILE HERNIA.

To the Editor of THE LANCET.

SIR,—Finding much difference of opinion among my professional brethren, as well as among the standard authors on children's diseases, regarding the proper treatment of infantile herniæ, I beg to invite correspondence, through the medium of your columns, on the subject, particularly as to the following points:—1st. When can a truss be most advantageously applied, the hernia being congenital? 2nd. What is the best form of truss for the ordinary inguinal variety? 3rd. Has the truss to be worn night and day? 4th. How long on an average will treatment by truss be required?

I was somewhat surprised when I first read it by a statement made in Vogel's Diseases of Children, which is as follows:—"In very young children. . . . In the first place it is necessary to have three trusses, in order to have a dry truss every time one gets soiled and wet from urine and fæces; and, besides, if the child thrives, the old trusses in eight or ten weeks will be found to have become too small and useless, and must be replaced by three new ones, thus perhaps requiring a dozen." But now I quite concur with the author, and experience has taught me that most of these herniæ undergo spontaneous cure, and that below, say eighteen months, trusses in children, under ordinary circumstances, are worse than useless. Parents are not, however, easily satisfied in these matters, and always desire something to be done, therefore they fall into the hands of chemists and instrument makers; and I regret to say that even after the best surgical advice has been obtained, I have seen a child four months old supplied by an instrument maker with two guineas cost of worse than useless steel and leather.

I am, Sir, yours, &c.,

Thurso, N.B., March 5th, 1883. JOHN CRAVEN, L.R.C.P. & S. Ed.

Dr. Rae.—We regret to be unable to find room for the communication.

Mr. Walter Hilton had better consult his medical attendant.

"QUININE."

To the Editor of THE LANCET.

SIR,—In THE LANCET of March 10th, Mr. Ratton writes that he has lately discovered a method of taking quinine—viz., in cold *café noir*. Will you allow me to state that I remember taking quinine in *café noir* more than twelve years ago in the West Indies, and it seemed then one of the commonest methods of giving the drug. I think hot *café noir* preferable to cold; in the latter condition the coffee, having lost all its aroma, gives one more the idea of "physic."—I am, Sir, yours truly,

Westminster Hospital, March 15th, 1883. E. A. G. D.

ANTIQUITY OF VACCINATION.

To the Editor of THE LANCET.

SIR,—Those interested in this matter will find a full translation of the Hindoo work referred to in THE LANCET, March, 1883, p. 485, and October, 1860, p. 592, as noticed in the "Medical Digest," Section 86:1.

I am, Sir, yours obediently,

Boundary-road, South Hampstead, N.W., March 20th, 1883. RICHARD NEALE, M.D.Lond.

"AN INTERESTING QUESTION."

To the Editor of THE LANCET.

SIR,—With reference to Dr. Cory's query in THE LANCET of March 10th, I should say the first child of the second marriage would be more of a mulatto than white; the subsequent children would approach nearer to the white type with each successive pregnancy. In the case mentioned of the mare and quagga, the first foal got by the pony stallion would be more of the quagga than the last. This is, I believe, in accordance with a rule of nature observed amongst animals that the impression of the male influences the offspring of the female by another male. As an illustration, I will mention a case in point that came under my own observation. A white fantail pigeon mated with a female blue rock; the result was half fantails of mixed colour. The male bird getting killed, the rock paired with a common white pigeon. The first progeny of this union were half fans, or very nearly so; while the subsequent young were still "fanned," but to a smaller degree, the last brood being considerably less so than the first.

I am, Sir, yours truly,

Notting-hill, March 12th, 1883. J. D. MILLER, M.D.

To the Editor of THE LANCET.

SIR,—In reply to the latter part of Dr. F. C. Cory's letter on the above subject, I beg to inform him that the experiment was not tried in the "Zoo.," but in the park of Lord Moreton, who, having a pure bred Arabian mare, introduced to her notice a handsome male quagga, by whom she was covered, after which the quagga was removed from her sight. In due time she brought forth a foal, very like herself; but being subsequently covered by a handsome black stallion, the offspring was more like the quagga, and each subsequent foal by the black horse being more and more like her first love, as Dr. Cory and your other readers may see by a visit to the College of Surgeons, where some well-executed paintings demonstrate this fact. I think his lordship published an account of this interesting matter in the Philosophical Transactions. I am, Sir, yours, &c.,

King's-road, Wimbledon, March 12th, 1883. T. M. STONE.

"MEDICAL EXAMINERS."

To the Editor of THE LANCET.

SIR,—In reference to the above, in your issue of the 3rd inst. (p. 330), I beg to make the following remarks. The answer of the Marquis of Hartingdon to Mr. Gibson, "that of the four examiners, one was an M.D. of Dublin," was rather misleading, inasmuch as out of a total of 3100 marks obtainable in the compulsory part of the examination, the said M.D. of Dublin has got control over only 100 marks. I also beg to suggest that the full number of marks attainable for each question should be affixed to that question, as then the candidates are enabled to know how much value the examiner attaches to the question. Lastly, I have to complain about the inordinate length of the paper in anatomy and physiology, which I enclose. One is apt to doubt whether the examiner himself would have been able to answer the paper in full in the space of three hours. I remain, Sir, yours, &c.,

March 12th, 1883. FAIRPLAY.

THE earlier issue of our current number, necessitated by the occurrence of Good Friday this week, has compelled us to defer the publication of many communications of importance and interest.

ERRATA.—In the abstract of Dr. Johnson's paper in our last impression, p. 455, second column, in lines 23 and 25 from the bottom, for "*three* drachms" read "*four* drachms." Line 8 from the bottom, for 1-8 read ½.—In Dr. Irwin's letter last week, page 477, the following corrections require to be made:—For "140 medical officers" (and where it is repeated), read "141," &c.; for "of the latter 11," read "of these 11;" for "24 possessing any qualification, &c.," read "27 possessing, &c.;" for "65 would have been ineligible," read "60 would have, &c."

COMMUNICATIONS not noticed in our present number will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Professor M'Kendrick, Glasgow; Sir H. Thompson, London; Mr. Lawson Tait, Birmingham; Dr. George Johnson, London; Dr. Quinlan; Dr. Matthews Duncan, London; Mr. H. K. Lewis, London; Dr. Irwin, Liverpool; Mr. Hamilton Cartwright, London; Dr. Rose, Chesterfield; Dr. Seaton, Nottingham; Mr. E. W. Wallis, London; Mr. P. E. Hill, Crickhowell; Mr. Sumner, Hillsbro'; Dr. Chalmers, London; Mr. Shapley, Bridgend; Mr. Beaumont, London; Mr. Bros; Dr. Mallez, Paris; Mr. W. N. Greene, Monte Video; Dr. Coleman, Surbiton; Dr. A. C. Campbell, Bothwell; Dr. Wright, Southport; Mr. Niven, Didsbury; Mr. Turner, Norwich; Mr. Wiglesworth, Liverpool; Dr. Holstein, Geneva; Messrs. Rountale and Barter, Cork; Dr. Brett, Watford; Mr. Pilgrim, Edinburgh; Mr. Gentles, Derby; Dr. Beresford Ryley, London; Mr. J. F. Briscoe, London; Dr. Clark, Bothwell; Mr. Partridge, Ludlow; Messrs. Middleton and Co., London; Dr. M'Murray, Cardiff; Dr. Tate, Nottingham; Messrs. Lee and Nightingale, Liverpool; Dr. Spence, Lichfield; Messrs. Adams and Francis, London; Mr. Aubert, London; Messrs. Williams and Co., Swansea; Mr. Fairbridge, London; Dr. Stone, Liverpool; Dr. Bodkin, Chefoo; Messrs. Nicholls and Co., London; Messrs. Isaacs and Co., London; Messrs. Street Brothers, London; Messrs. Packham and Co., Croydon; Mr. Westwood, Birmingham; Messrs. Maclehose and Sons, Glasgow; Dr. Collins, Gorleston; Mr. Martin, Sunbury; Mr. Baker, Michigan; Dr. Macindoe, Venezuela; Messrs. Miller and Richards, London; Mr. Hamilton, Douglas; Mr. Hodgson; Messrs. Burroughs and Co., London; Dr. Smith, Dumbarton; Messrs. Gillon and Co., Leith; Mr. Wills, London; Dr. Glasscott, Manchester; Dr. Mackern, Buenos Ayres; Dr. Lloyd Robert, Manchester; Dr. Swift Walker; Dr. Woakes, London; Dr. Clifford Beale, London; Dr. Robert Park, Glasgow; Dr. Garrod, London; Dr. Broadbent, London; Dr. Galton, London; Mr. Ely, London; Dr. Nicolson, London; Dr. Champneys, London; Dr. J. A. Campbell, Garlands; Messrs. Kegan Paul and Co., London; Dr. M'William, Thorpe; Mr. Farrar, Hartlepool; Mr. Pryce, Truro; Mr. Snowball, Sunderland; Dr. Fryer, York; Mr. Cornfield, Stoke Newington; Mr. Heath, Walsall; Mr. Square, Kingsbury; Messrs. Woolley and Co., Manchester; Mr. Berry, Wigan; Mr. Dyer, Bath; Mr. Dawson, Louth; Mr. S. Lacy, Guernsey; Mr. Wilkin, Walthamstow; Mr. H. Sergeant, London; Dr. J. R. Hamilton, Hawick; Mr. Hemmingway, Retford; Mr. Rusebs, London; Mr. Style, London; Confido; Agnostic; Subscriber since '65; M.D.; Anti-Typhus; Medicus; Justitia; Rustic; Scotland; &c., &c.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Clark, Folkestone; Mr. Hornebrook, London; Messrs. Wood and Co., New York; Messrs. Butlin and Mathinson; Mr. Robertson, Liverpool; Mr. Inkin, Swansea; Mr. Cripps, Liverpool; Messrs. Robertson and Scott, Edinburgh; Messrs. Smith and Co., Bournemouth; Miss Jebb, Srodone; Dr. Woodroff, Ballspond; Mr. Samson, York; Mr. Hudson, Redruth; Messrs. Rogers and Co., London; Mr. Steven, Shanghai; Messrs. Adams and Francis, London; Messrs. Dawson Brothers, Montreal; Mr. Forbes, Blairerno; Messrs. Lee and Martin, Birmingham; Mr. Ostell, Carlisle; Mr. Webb, Bury; Mr. Hern, Darlington; Mr. Williamson, London; Mr. Hartley, Huddersfield; Mr. Thompson, Mytholmroyd; Mr. Taberner, Wigan; Messrs. Hutchinson and Wardell, Bishop Auckland; Mr. Roberts, Attercliffe; D. T.; Scalpel, Uttoxeter; Delta, York; M. A. A. L., Longton; X. Y. L.; Q. E. D.; Antler; Medicus, Exeter; M. L., Camden-town; G. G., Edinburgh; G. M., Wigan; Medicus, Manchester; B., Rotherhithe; Aqua; W. H. R; P. H., Hastings; D., Swansea; X., Oldham; Alpha, York; Medicus, King's-cross; Xerxes; Alcali, Swansea; A. E. N., London; W. W.; W. B., Norwood; &c., &c.

Journal de St. Pétersbourg, British Workman, Italian Times, Devonport Independent, Sunderland Herald, Evening Mail, Englishman, Weston Mercury, &c., have been received.

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